Pediatrics Supplement

Contributed by

The American College of Osteopathic Pediatricians

Volume 1 May, 1948
Number 1 Pages 1 to 32

PEDIATRICS SUPPLEMENT

The American College of Osteopathic Pediatricians

Volume 1 | May, 1948 | Number 1

CONTENTS

EDITORIALS

March of Progress 3

Pediatrics Looks Ahead 3

Helen C. Hampton 3

ARTICLES

The Osteopathic Concept in Pediatrics. Ruth E. Tinley, D.O., Philadelphia 4

Obesity in Childhood. Leo C. Wagner, D.O., M.Sc., Philadelphia 7

Irradiation of Tracheobronchial Lymph Nodes. Roger Abbott Peters, D.O., Oakland, Calif. 9

Diet in Illness: Oral and Parenteral. William S. Spaeth, D.O., Drexel Hill, Pa. 10

Tonsils In or Out. F. Munro Purse, D.O., Narberth, Pa. 12

Acute Diseases of Childhood. E. Jane Cunningham, D.O., Flint, Mich. 15

Feeding Problems of Childhood. Helen C. Hampton, D.O. 17

Behavior Aspects of Feeding. Arnold Melnick, A.B., D.O., Philadelphia 20

Pediatrics: Art of Practice. Dorothy Connet, D.O., Kansas City, Mo. 23

Review of the Rh Factor. Nelson D. King, D.O., Boston 25

The Cranial Aspect of Emergencies of the Newborn. Beryl Arbuckle, D.O., Philadelphia 27

ADDITIONAL MATERIAL

Pediatric Books of Interest 31

Pediatric Briefs 31

For Our Children's Future 32

Infant Mortality in 1946 32

PEDIATRICS SUPPLEMENT
American College of Osteopathic Pediatricians

Editorial Office, 139 N. Clark St., Chicago 2, Ill.
Address all communications to the Chicago Office
Copyright 1948 by the American Osteopathic Assn.

ARNOLD MELNICK, Philadelphia.....Editor

OFFICERS
PRESIDENT.....BERYL ARBUCKLE, Philadelphia
VICE PRESIDENT.....ROGER ABBOTT PETERS, Oakland, Calif.
SECRETARY-TREASURER.....E. JANE CUNNINGHAM, Flint, Mich.

MARCH OF PROGRESS

This is, to our knowledge, the first time a Pediatrics Supplement has been issued in conjunction with THE JOURNAL. It marks another step forward—a step of progress for osteopathic pediatrics and for the American College of Osteopathic Pediatricians.

Osteopathic pediatrics as a specialty field of practice was recognized long before any formal organization was formed. Early in the development of osteopathy it was discovered how little bodies with their malleability and flexibility responded to manipulative technics. Every physician in the profession has no doubt found, and early in his career, the surprising response to osteopathic care in the case of a child with one of the acute and contagious diseases. Progress in the knowledge of childhood disorders has added much to manipulative successes, until now the osteopathic pediatrician is well trained and well equipped to take his place among other specialists.

Much of the growth of osteopathic pediatrics as a specialty has been guided by the not-too-old American College of Osteopathic Pediatricians. Formed a few years ago with a handful of interested physicians, the ranks of those actively identified with the field of child care now number over fifty. Applications are being processed for additional members.

New activities of extracurricular nature, but of vital importance to this new science, have found their way into the College. Recently organized, after much serious planning and work by Dr. William S. Spaeth, past-president of the College, was Region I. Dr. Spaeth several years ago suggested divisional subgroups of the mother organization to serve better the purposes for which it was founded. This reality came into being less than 1 year ago, and Region I, located in the East, is now functioning smoothly.

Reestablished last year also was the *Bulletin of Pediatrics*, revived after several years of inactivity. It met with the enthusiasm of the officers and members of the College, and now serves as a means of communication between the various sections of the country.

Finis cannot be written without a word about this Supplement. Through the suggestions and cooperation of Dr. R. E. Duffell, Editor of THE JOURNAL, and the work of many members of the College, it, too, has become a reality.

Osteopathic pediatrics had a slow start. It is gaining momentum. Its only goal is to be an end in itself. In that sense, there is no stopping it. It shall never cease to grow.

A. M.

PEDIATRICS LOOKS AHEAD

Gone are the days when the pediatrician was just a formula-maker, juggling evaporated milk, sugar, and juice. He is no longer a physician with a special love for children.

Today, the study of children is a thoroughgoing science, replete with scientific background and abounding with information about everything to which a child is heir. From the physiology of the fetus up to and including the endocrine and psychiatric aspects of adolescence, pediatrics now stands on its own feet.

Some measure of the growth of a specialty is given when subspecialties begin to arise. That is true of pediatrics. There can be found pediatric surgeons, pediatric cardiologists, pediatric ear, nose, and throat specialists, and so forth.

Much of the progress of pediatrics is directly attributable to those specialized groups. Our knowledge of normal activities and behavior of infants and children springs from the work of physicians like Gesell[1] and Spock[2]. New impetus for diagnosis of congenital heart disease has come from pediatric cardiologists like Taussig[3] and treatment has been improved by surgeons such as Gross[4] who are gifted in work with children. Many other authors and contributions could be mentioned.

Newer fields of work in pediatrics are opening up. Child psychiatry has already been born, and succeeding years will add greatly to our knowledge stores of the problems of childhood and infancy. Perhaps this will help us avoid many of the mistakes now made.

Pediatric allergy is coming to the fore, to claim its rightful place in the sun.

However, the greatest vista is that opened up by the increased study of prevention in pediatrics. Child care in the future will look to avoiding illness and preventing problems. No longer will the doctor wait around for sickness to strike. That, truly, is the aim of good pediatrics and therein lies its future.

A. M.

HELEN C. HAMPTON

The profession deeply mourns the passing of Helen C. Hampton, osteopathic pediatrician, on April 16. She was the wife of Dr. Donald V. Hampton, Cleveland, a trustee of the American Osteopathic Association.

Dr. Helen graduated from the Kirksville College of Osteopathy and Surgery in 1927 and joined her father, Dr. Mead K. Cottrell and her husband in practice in Cleveland, limiting her activities to pediatrics. She was a past secretary-treasurer and vice president of the Cleveland District Osteopathic Association and helped to organize the Soroptomists Club in Cleveland. In 1946-47 she was president of the American College of Osteopathic Pediatricians.

1. Gesell, A., and Amatruda, C. S.: Developmental diagnosis; normal and abnormal child development. Paul B. Hoeber, New York, 1947.
2. Spock, B.: The common sense book of baby and child care. Duell, Sloan and Pearce, Inc., New York, 1946.
3. Taussig, H. B.: Congenital malformations of the heart. Commonwealth Fund, New York, 1947.
4. Gross, R. E.: Surgical treatment for abnormalities of the heart and great vessels. Charles C. Thomas, Springfield, Ill., 1947.

Journal A.O.A.
Vol. 47, No. 9

The Osteopathic Concept in Pediatrics*

RUTH E. TINLEY, D.O.
Philadelphia

In many particulars disease in children differs from that in adults, the greatest contrast being in infancy and early childhood. After the seventh year, symptoms in children tend to simulate those in adults. Age plays a most important part in differential diagnosis. Before the age of 3 years the chief and almost sole reliance of the physician must be placed on objective signs of disease. This is not entirely because the disease is peculiar but the patients are peculiar.

Certain fundamental facts should always be kept in mind. A sick infant is more likely to be suffering from only one disease or the complications of one disease. The physician is often baffled by the variety and apparent remoteness of symptoms founded on a single disease factor. For instance, digestive and neurological symptoms so commonly accompany pathological processes, particularly inflammations, in practically any part of the body that they are not necessarily significant in pointing to those particular regions or symptoms as the sites of trouble. We can illustrate this complexity by the number of times we are confused by referred pains in children. In the presence of upper respiratory infection or congestion, there is invariably abdominal pain and the child always locates his pain by covering the umbilicus. Differential diagnosis can soon be determined by a thorough examination and blood count. An x-ray is sometimes most essential.

A complete physical examination is important. A few high points to be borne in mind when examining a child are: (*a*) Nutrition and general development; (*b*) posture—(Does child lie on back, side or abdomen? Is head drawn back with general flexion of extremities?); (*c*) color of skin; (*d*) facial expression; (*e*) nervous condition; (*f*) amount of prostration; (*g*) character of respiration; (*h*) cry.

The pulse, respiration, and temperature are not to be measured by adult standards, because the susceptible nervous system of infants greatly exaggerates their reaction to all forms of acute infections. The rate, regularity, and quality of the pulse should be observed. A slow irregular pulse is always significant. In acute disease 150 is common and the rate may be 170 to 180 when symptoms are not severe.

The rate, depth, and rhythm of respiration should be noted. It is difficult to determine the rhythm except by attentively watching the child for several minutes. Marked irregularity is noted in premature and weak young infants. Temperature in infants is usually higher than in adults from corresponding causes. Moreover, very high temperatures may exist in cases not serious. This seldom remains high very long. Artificial heat produces abnormally high temperature.

Osteopathic pediatrics begins at birth. Most obstetricians turn the infant over to the pediatrician as soon as it is born for examination and care. An established routine exists in our hospital for a thorough examination and check on every newborn in the first 12 hours after birth. Early revelation of congenital malformations, which are of an infinite variety, are revealed. Placental transmission of disease or diseases of deficiency states in the mother can be detected early in infants and can be treated.

Every physician should be familiar with a normal newborn. Every child born does not need osteopathic manipulative treatment, but should have a complete osteopathic examination. It is well to be familiar with the normal growth and development. There are four distinct periods of growth:

1. Rapid growth in infancy with gradually decreasing velocity extending to the fourth year
2. A subsequent period of relatively constant growth extending up to the onset of puberty
3. A rapid spurt at puberty followed by
4. A gradual diminution in rate until growth ceases.

This general type of growth pattern, characteristic of the body as a whole, holds also for most of the external dimensions of the trunk and extremities, and for the organs of digestion, respiration, circulation, and excretion.

Factors influencing growth are as yet incompletely understood. The endocrine glands, notably the thyroid and anterior lobe of the pituitary, unquestionably play a part as catalysts of growth. Of course, to some extent, growth is determined by hereditary factors, both racial and familial.

Measurements are significant and should be made regularly for a check on growth and development. When abnormalities are detected in routine examinations roentgenographic and psychometric studies may be indicated. We must always remember in evaluating measurements that there is a wide range of normal variability. If the deviation is considerable, the probability of its being abnormal calls for further investigation.

The weight of an infant is the best means we have to measure his nutrition. It is as valuable a guide in infant feeding as the temperature is in a febrile disease. Although weight cannot be taken as the only criterion of health, it is of much importance and cannot be neglected. Loss of weight occurs normally during the first few days and is proportional to body weight, that is, large babies lose more than small ones. Perfect health in infancy is consistent with a regular gain in weight. The gain may not be rapid but unless it is steady something is wrong. During the first half year any arrest of weight which persists for a week has a pathological significance.

With a thorough knowledge of the normal infant's appearance we can now turn our attention to abnormalities.

Accidents connected with birth, such as intracranial injuries resulting in peripheral nerve palsies and fractures, can be discovered and treatment instituted early.

We have had some most encouraging results in treating cranial injuries and lesions with Dr. W. G. Sutherland's cranial technic. This therapy has demonstrated most encouraging results in treating tremors, cyanosis, and vomiting in newborn infants. They are also treated successfully through the reflex centers.

*Delivered before the General Sessions, Fifty-First Annual Convention of the American Osteopathic Association, Chicago, July 24, 1947.

Talipes can be treated without casts in many cases. It is well to have the feet x-rayed to see just what is causing the deformity and to be sure that all the bones exist before attempting to normalize structure. I read a very interesting article on this subject by an allopathic physician; he advocated manipulative treatment in these cases to restore normal position and circulation.

The early recognition of congenital hip deformity is important; it is easy to detect in the young child if we bear a few facts in mind. With the baby in the prone position examine the gluteal creases; if the crease is higher on one side than on the other, the hip on the high side is the one usually affected. With the baby in the supine position the knee on the affected side will be higher than the opposite knee and internally rotated.

A very careful examination of the head, checking the fontanels and sutures and observing the position habitually held by the baby may point out abnormalities.

Preventive medicine and prophylaxis are important phases of the osteopathic concept. We all have had the experience of handling well and happy babies when they are under our close supervision with periodic checkups; but after the first year they slip away from our scrutinizing care, the visits are less frequent, and we are shocked many times to see changes that have taken place. The child has become anemic, lost weight, has a bad disposition and seems far from normal. We should caution the parents to resume regular visits with their child, so that we may continue to keep him under close supervision.

Just as we were so careful to prevent diarrhea and infection in the newborn and continued to build up a good normal structure during the first year, we should continue to be vigilant during the entire formative period, which is the first five years. It is during this period that diseases of the endocrine system may be detected. All disorders of thyroid seen in adults are met with in children, although not so frequently. Many children are brought to us for examination because of palpitation, weakness, irritability, restlessness, emotional instability, loss of weight and various neurasthenic symptoms. These children usually do not have thyroid disturbance. In chorea tremors may be present suggestive of hyperthyroidism. Rapid pulse, elevated blood pressure, and increased metabolic rate may be deceptive due to excitement of examination. Repeated examinations should be made after the physician has gained the child's confidence. If possible the child's pulse should be counted during sleep. True hyperthyroidism, although showing waves of remission, practically always becomes progressively worse. Treatment should always be controlled by the determination of the basal metabolic rate, which should be maintained at the normal level or slightly above it.

In cretinism the symptoms presented depend partly upon the age of the child before treatment is instituted and partly upon the degree of deficiency. In most cases cretinism becomes apparent during the second half of the first year, but is sometime so slight as to pass unnoticed until the second or third year. In rare instances the condition is suspected as early as the second or third month. The delay in the development of symptoms is usually ascribed to the protection afforded the infant by the thyroid secretion of the mother during intra-uterine life. Unless treatment is begun, the abnormalities become more and more marked with passing years.

The untreated case of cretinism presents a picture which can be recognized at a glance—height stunted, proportions between upper and lower skeletal segments correspond to height rather than age; large head, fontanels open for 2 years. The cretin presents a mental and physical torpor which is as characteristic as its appearance. He is content to lie for long periods and is little interested in his surroundings. The development is markedly slow, especially the centers of ossification; sometimes a child of 5 or 6 years may have an osseous development of a 6 month infant. In the first year or two of life, the time when adequate treatment offers the most favorable prognosis, the cretin frequently does not have the characteristic and easily recoganizable picture which has been described. On superficial inspection he might be mistaken for a fairly normal infant, younger than his age. For example a cretin of 18 months may look like an infant 5 or 6 months of age; however, the diagnosis of the fully developed condition is easy. Roentgenograms of bones should confirm the diagnosis for a normal osseous development excludes cretinism.

Mongolian idiocy should be differentiated from cretinism by peculiar formations of eyes and extremities, hypermobility of joints and frequent association with congenital malformation of the heart. Mongolism does not cause retardation of ossification and rarely affects growth. The patients are more active than cretins, and may have warm moist skin with good color.

It has become customary to ascribe various conditions of childhood to hypothyroidism. Frequently the mentally subnormal or physically stunted infant is diagnosed hypothyroid which is not justified unless x-ray reveals a delay in osseous development and there are evidences of subnormal metabolism. If there is too much doubt in the diagnosis, it is desirable to begin treatment rather than run the risk of delay.

In a doubtful case diagnosis can be established by withholding thyroid treatment for from four to six weeks. If cretinism exists, there is a fairly rapid gain in weight and a loss of color in the cheeks and lips; the child gradually becomes more sluggish and the blood cholesterol rises rapidly. The characteristic dryness and coarseness of the skin may not develop for weeks or months. The prognosis depends largely upon the age at which treatment is begun and the intensity and continuity with which it is carried out. Without treatment the cretin is doomed to imbecility and dwarfism. If thyroid treatment is adequate and not too long delayed, the prognosis for attaining approximately normal growth and physical development is good, but much poorer for normal mental development. Prognosis is best when treatment is begun under two years of age; however, it is probable that in some instances the thyroid insufficiency has caused irreparable damage to the nervous system in the earliest months of infancy. Intensive thyroid treatment often causes unmanageable conditions and in these cases should be discontinued until an adequate therapeutic trial has been proved. Thyroxin has no place in the therapy. Dessicated thyroid given by mouth is the therapeutic agent of preference. If toxic symptoms of cramps, diarrhea, vomiting, twitching or fever with rapid pulse occur, the dosage should be cut temporarily or omitted for a few days, and resumed at a lower dosage. The treatment must be continued over a long period and the patient kept under frequent observation.

Diabetes mellitus is often overlooked because of neglect of urinary examination in children. Not only

polydipsia and polyuria but any case of obscure loss of weight should direct attention to the urine. Enuresis commencing suddenly should make one suspicious. One should not be too hasty in making the diagnosis merely from a reducing test in the urine as this may cause unnecessary alarm. If in doubt, alimentary and renal glycosuria should be ruled out by a blood sugar determination. If the fasting blood sugar is high, the diagnosis of diabetes is assured and a glucose tolerance test is unnecessary.

The principles of treatment are the same as with adults, but with children it is advisable to avoid high fat diets. Ketosis occurs more rapidly and there is a danger of producing nausea and anorexia by a diet of this kind. The procedures used by different physicians vary widely. There are three variables to be dealt with; the diet, the insulin, the amount of exercise taken and perhaps a fourth, the emotional state.

Treatment of diabetes in children involves considerably more than the treatment of the disease proper. Because of the serious consequences of infections of all kinds, every effort should be made to prevent them. Isolation of patient from individuals with common colds or other diseases should be enforced.

The recognition of pituitary lesions still rests largely on a clinical basis. Of the greatest diagnostic importance are changes in visual fields. I have no general recommendations to make either for diagnosis or treatment of pituitary lesions.

During the formative period many cases of rheumatic fever can be isolated and helped if the physician is on the alert. If a child is brought to the physician with the chief complaint of pain in one or both legs, the mother should not be encouraged to believe it is growing pains and let it go at that. The child requires a thorough physical examination, including blood count and sedimentation rate.

The clinical and pathological picture strongly suggests an infectious process. The heart lesions are characteristic and may involve the myocardium, or present an endocarditis or pericarditis. The myocardium usually shows dilatation which is dependent on toxic damage. Endocardial lesions are confined largely to the valves. One authority gives the following order in frequency of involvement in 97 cases. Mitral 97, aortic 57, tricuspid 35, pulmonic 2. By far the most frequent of the rheumatic phenomena in childhood are the cardiac manifestations; it is probable that some cardiac involvement occurs in nearly every case. A transient electrocardiographic abnormality in approximately 95 per cent of patients was found in one series of cases. The younger the patient the more likely he is to suffer cardiac damage. Abdominal pain may initiate a rheumatic attack causing confusion in diagnosis. As a rule the pain tends to be in the epigastrium and is not sharply localized; there is no tenderness or rigidity. Abdominal pain usually responds to salicylates.

Rheumatic infection in childhood is more often overlooked than confounded with other diseases. In order to recognize it promptly, one must bear in mind its many varied and often inconspicuous manifestations and must search for other evidence of the disease: Pain in the joints, with or without fever, precordial pain, dyspnea on exertion, choreiform movements, weakness, or clumsiness. The attacks are invariably accompanied by constitutional disturbances, but not as marked as with adults. The temperature usually ranges between 100 and 102 F., rarely higher. The pulse is elevated in proportion to the fever. If pulse is extremely rapid, it suggests cardiac involvement.

The course in the individual is highly unpredictable. The tendency to recurrence has already been stressed. There is no specific treatment for rheumatic fever; the chief objective in the acute attack is to afford symptomatic relief and limit the cardiac damage as far as possible. Bed rest, skillful nursing, proper diet, and specific osteopathic manipulative treatment are the best procedures according to my experience.

With a clear osteopathic concept of disease we are equipped to treat it with specific precision. I fear too many of us have fallen into the error of giving a general treatment without knowing whether or not it reaches the particular trouble. Why not lend our best endeavors to locating the precise trouble and treating it with specific technic?

According to Dr. Andrew Taylor Still, every body is endowed with a mechanism capable of combating disease. If we direct our efforts to building and maintaining normal bodies endowed with immunity, is it necessary to experiment with questionable serums?

In pediatrics if we can establish a normal foundation and maintain a nearly normal equilibrium we shall have accomplished much in perpetuating an Osteopathic Concept which will add to the posterity of all mankind.

1318 Wakeling Ave.

REFERENCES

Holt, L. E., and Howland, J.: Holt's Diseases of infancy and childhood. Ed. 11, revised by L. E. Holt, Jr., and R. McIntosh. D. Appleton-Century Co., New York, 1940.

Joslin, E. P., *et al.*: The treatment of diabetes mellitus. Ed. 5, revised and rewritten. Lea & Febiger, Philadelphia, 1935.

Loewenberg, S. A.: Clinical endocrinology. Ed. 2, revised. F. A. Davis Co., Philadelphia, 1941, pp. 712-717.

Scammon, R. E.: The measurement of the body in childhood, in The measurement of man, by Harris, Jackson, Paterson, and Scammon. University of Minnesota Press, Minneapolis, 1930, Chap. 4.

Smyth, F. C., and Olney, M. B.: Comparative studies on the use of standardized protamine zinc and crystalline insulin, in American Pediatric Society Transactions. Am. J. Dis. Child. 58:919, Oct. 1939.

Washburn, A. H.: Significance of individual variations. J. Pediat. 8:31-37, Jan. 1936.

Wolf, W.: Endocrinology in modern practice. Ed. 2, revised. W. B. Saunders Co., Philadelphia, 1939, pp. 715-716.

BETTER HEALTH FOR OUR CHILDREN

For twenty-five years it has been the custom of the American people to observe the first week in May by calling the attention of our citizens to the health of the child . . . Not that childhood needs have been particularly accentuated in the recent time, but because science has taught us of late that our children can be made healthier and happier if we take advantage of modern achievements. The fact is that many of our young ones still die unnecessarily each year, and too many of them grow up without the benefits of physical and mental care which is universally available but not fully utilized. Too many reach maturity with preventable physical and emotional handicaps which interfere with their happiness and their efficiency.

A person is said to be in good health when his body and mind work harmoniously so that the whole organism is capable of adapting itself to the demands made upon it by society. Life today is a highly technical and complicated game and those participants in it are successful who are blessed with a technic of fairness and a feeling of competency. These qualifications, broad as they may appear, are the only inclusive criteria for health. . . . —Herman M. Jahr, *Hygeia*, May, 1948.

Pediatrics Supplement
Vol. 1, No. 1, May, 1948

Obesity in Childhood*

LEO C. WAGNER, D.O., M.Sc.

Philadelphia

Obesity is probably the most mismanaged condition met with in pediatrics. It is rarely a problem in early childhood, but becomes increasingly important in late childhood and adolescence. The child is brought into the physician's office primarily because of the embarrassment he is being subjected to by the taunts and jibes of his associates or because the parents have become concerned, primarily about his apparent lack of genital development, and secondarily because of his obesity. Then follows some superficial examination wherein there is noted what seems to be hypogonadism, girdle obesity, and excessive mammary development. A diagnosis of Fröhlich's syndrome is made and a course of injections is prescribed. Or, noting obesity and what seems to be coarse and dry hair, a diagnosis of hypothyroidism is made and thyroid medication is suggested.

Unfortunately the laity, especially educators, and a large percentage of the medical profession are too ready to accept glandular dysfunction as a cause of obesity in the child. Actually glandular abnormalities are an infrequent cause of obesity. In over 95 per cent of all fat children, their condition can be classified as "simple obesity" with only psychological or environmental factors as causative agents.[1]

Considering obesity, then, as primarily a developmental problem rather than an organic one, a careful history is important as well as thorough observation and appraisal of the parents of the child. Sometimes parents assume erroneously that a large appetite insures good health and therefore urge their children to eat too much; in an acquiescent child this would lead to obesity. If both parents are obese, the servings are probably gluttonous and what that family consumes in one meal would feed another family an entire day, or their diet is high in starches and concentrated foods.

Psychologically, numerous factors may be the cause of obesity. Food may have taken on exaggerated importance and may become a substitute for love, security, and satisfaction.[2] The relations between the parents may be unhappy and the child may manifest his insecurity by overindulging in food. A child may nibble at candy, nuts, etc., to relieve himself of worry, unhappiness, or boredom. He may stuff himself at meal times as an attention-getting mechanism, or he may eat only starches and other high calorie foods at meals and raid the pantry between meals for cookies, cakes, etc., to show his resentment toward one or the other of his parents for some real or fancied injustice. Realizing that his parents resent his eating of starches he persists in so doing to "get even" with them.

On physical examination the great majority of obese boys and girls will be found to be of average height or above.[3,4] Other body measurements are unusually large in obese children. X-rays of the hands and wrists show that skeletal development either corresponds to the normal for the chronologic age or is slightly advanced.[3] They are of normal intelligence and quite a few are in the top third of their classes at school. In the male child the external genitalia often appear to be small because they are embedded in a thick pad of pubic fat. By pressing the fat aside this erroneous impression can be dispelled. It is noteworthy that normally in boys the genitalia remain infantile in size until 11 or 12 years of age[5] and may not develop for 1 or 2 years later than average.

The basal metabolism of the adolescent is an unreliable guide for the following reasons: (1) Preceding the period of maximum growth the rates will be elevated and following the period of maximum growth the rates may be depressed; (2) preceding the menstrual period the rates will be high and following the period the rates will be low.[6]

While the great majority of obese children are usually suffering from "simple obesity" and, as pointed out, have no physical abnormality other than their excessive weight, nevertheless, there are a few conditions of a pathological nature that have obesity associated with them.

Although obesity and hypothyroidism are frequently associated in the lay and professional mind, actually it is a rare association in childhood. This is explained by the fact that hyopthyroidism diminishes the appetite as well as decreases the physical activity and growth. Hypothyroid children are sluggish mentally and physically. Their skin is pale, coarse, dry, and cool. They are under average in size and roentgenologically the hands and wrists reveal a retardation in skeletal development. Their serum phosphatase is less than 4.5 Bodansky units per 100 cc. while their blood cholesterol is elevated. An elevation of 250 mg. or more per 100 cc. of blood is very suggestive. However, many hypothyroid children will have a normal or subnormal cholesterol, but if these children are given 1 or 2 grains of thyroid per day for a month or two and it is discontinued, they will develop cholesterolemia within the next 3 months. Children with normal thyroids do not do so.[1] The basal metabolic rate should be less than minus 25 to be of any value. Before leaving the subject of hypothyroidism, it might be well to call attention to the fact that occasionally when hypothyroidism develops in the adolescent its manifestations are so vague that diagnosis is difficult. Intelligence is usually unimpaired and the general behavior is frequently more suggestive of increased rather than diminshed thyroid activity.[7]

From the foregoing it is evident that a diagnosis of obesity due to hypothyroidism is untenable with no other symptom than coarse hair and obesity. Likewise, a diagnosis of Fröhlich's syndrome is untenable with only girdle obesity and what appears to be hypogonadism. Fröhlich's syndrome is a rare condition of obesity and hypogonadism, associated with signs and symptoms of an expanding intracranial lesion, e.g., headache, vomiting, and diminishing eyesight. The intracranial lesion is located in the area of the sella turcica, either intrasellar or suprasellar. Whether or not there will be hypogonadism, depends upon the age that the lesion begins to expand. Should this occur around 10 years or younger no lack of gonadal development will be observed, whereas such evidence will be manifest if the lesion starts expanding around 14 or 15 years of age. Therefore, a diagnosis of Fröhlich's syndrome requires, in addition to obesity, signs and symptoms of an expanding lesion within the cranium, usually in the region of the sella turcica.

*Presented before the meeting of Region I, American College of Osteopathic Pediatricians, New York City, April 2, 1948.

For the sake of completeness two additional forms of obesity, also rare, should be mentioned, Cushing's syndrome and Laurence-Moon-Biedl syndrome. The former, Cushing's syndrome, is believed to be due to an adrenal cortical carcinoma. It may occur at any age from infancy on. The obesity is usually of the "buffalo" type, that is, marked accumulation of fat about the head and neck while the extremities are lean. Muscular weakness is a characteristic finding. The cheeks are plethoric in appearance due to hypertension which is an outstanding finding. There are purple striae in the skin over the hips, abdomen, and thighs. Precocious development of the genitalia is common. While the skeletal development tends to be normal for age, osteoporosis of the spine is frequently found. Intravenous pyelograms may help to reveal the tumor. The Laurence-Moon-Biedl syndrome is a hereditary familial defect wherein obesity is associated with retinitis pigmentosa, hypogonadism, mental retardation, and polydactylism or syndactylism or both.

TREATMENT

Obesity, regardless of cause or etiological factors, means caloric intake exceeds caloric expenditure. Reversal of this ratio results in cure. However, while the cure is very simple, its application is sometimes very difficult. At times it may not be worth while attempting to reduce the weight of a child. This is particularly true in the cases of obesity at or near puberty. Children are growing individuals. A quantity of fat which may be moderately excessive in a small child will be normal for the same child when he is a few inches taller. Therefore, all that may be necessary in these instances is to adjust the diet so that no further increase in weight occurs. However, where the weight is so excessive that it interferes with the normal pursuits of childhood an attempt at reduction should be made.

How can one induce a child to eat less? This is a difficult problem. Its solution, regardless of whether the child is preadolescent or adolescent, depends upon the parents in a great measure. One can prescribe a diet but how can it be expected to be helpful if the parents complain, "Oh, he'll never thrive on this diet. Why, it's only one-third of what he usually eats," or "But there are no puddings or bread to speak of in this schedule." In other instances the child's psychological status must be considered and indications of insecurity, frustration, unhappiness, or attention-getting mechanisms must be sought. In short, careful psychological appraisal is important to the successful outcome.

In the case of the high-school child psychological factors must be sought, but in them the mechanism is usually a little different. By this time the parents have become considerably concerned about the obesity and they start nagging, threatening, and punishing for dietary indiscretions. These serve only to increase the child's resentment and his frustrations, and encourage him to continue in his indiscretions or increase them. The obvious result is unhappiness in the household and of the child, and not only is there a failure to lose weight, but also actual increase may occur. Obviously parental cooperation in the control of obesity is of paramount importance, but extremely difficult to secure. Repeated talks to the child may be effective. In these the inadvisability of eating candy, ice cream, soda pop, etc., is brought out. He is urged to build up his will power, pointing out to him not only the lack of food value in these things, but their deleterious effect upon his system. Appealing to his vanity is helpful—calling his attention to the fact that the opposite sex is not attracted to an unsightly physical condition.

In his conflicts and uneasiness and insecurity, he has turned to overeating as a source of comfort and enjoyment. He cannot be expected to give up this pleasure until he has found new sources of satisfaction. Treatment of an obese adolescent, therefore, means more than calculating a reducing diet. He needs help for his personal difficulties and whether or not reduction in weight will occur depends upon how successfully these problems are handled.

Since most obese children are prone to indulge in less physical exercise than their thinner associates, this should be corrected. An increase in energy output should be encouraged. Any form of increased physical activity should be urged.

It is now evident that outlining a diet is not the only requisite for reducing an obese child and probably it is not even an important factor. However, it is helpful and, of course, advisable. Some simple advice as the following is most helpful:

1. Eat no candy, cakes, cookies, jams, ice cream, or sugar and no desserts to which these ingredients or flour have been added in any considerable amount.

2. Eat not more than half a slice of bread (any type) at a meal *or* its equivalent in rice, macaroni, spaghetti, potato, or other starchy food.

3. Drink at least 3 glasses of skim milk a day.

4. Eat as much as desired of lean meats, fish, colored vegetables, salads, and fresh fruits. Use vinegar or mineral oil dressing. Use ordinary common sense in not stuffing on any particular food.

5. Plan to eat three reasonable meals a day. The individual who eats no breakfast, a small lunch, and a huge dinner tends to gain more weight than the one who eats the same amount of food equally divided between three meals.

In prescribing a reducing diet for children it should be borne in mind that with the necessary reduction of fats and carbohydrates, the proteins should be correspondingly increased. The great need of calcium at this time should also be remembered and at least 1 quart of milk daily should be used. It has been shown that during the period of maximum growth in the girl (which usually precedes the onset of the menses by about a year) there is a high retention of both calcium and nitrogen whereas following the establishment of the menses there is a low storage of these minerals.[8] A corresponding increase in vitamin D is also important at this time and 1,000 to 1,500 units should be given daily during this period in order to avoid the development of "adolescent rickets," slipping of the upper femoral epiphysis (epiphysiolysis), and vertebral epiphysitis. It is the maintenance of this mineral balance that makes the unwarranted and promiscuous use of thyroid extract harmful because if the rate of metabolism is elevated too high *any time* during the period of growth, the above mentioned pathological states can be induced.[8]

In summary, the management of obesity involves a diet high in protein and calcium, low in calories, adequate vitamin intake and a sympathetic consideration of the psychologic factors in the background. Adjunctive treatment in the form of benzedrine sulfate (amphetamine sulfate) may be used in doses of 10 to 30 mg. daily. This may be given as 5 mg. before breakfast and 5 mg. before lunch. If a third dose is

needed, it should be given before 4 p.m. If this amount is ineffective or if tolerance results, the dose may be doubled. This dosage may be used regardless of age.[9] However, benzedrine is not a panacea. Unless the underlying cause of obesity is removed, the appetite returns when the drug is discontinued and obesity again occurs.

Glandular extracts have no place in the treatment of obesity. What has been said about thyroid medication applies equally to testosterone and estrogens. Anterior pituitary-like substances and chorionic gonadotropin are of no value in weight reduction and are of questionable value in stimulating sexual development. It has been shown in obese boys with apparent hypogonadal development that merely reducing their weight was sufficient stimulation to expedite gonadal development.[4]

In the management of Fröhlich's syndrome and Cushing's syndrome, surgical intervention is necessary to remove the tumorous growths. The surgery, however, has no effect upon the obesity and what has been said concerning weight reduction must be applied to these cases postoperatively.

The obesity of Laurence-Moon-Biedl syndrome must also be approached as discussed previously. This, like the other forms of obesity, results when caloric intake exceeds caloric expenditure and a reversal of this ratio results in a cure.

135 So. 17th St.

REFERENCES

1. Talbot, N. B.: Obesity in children. M. Clin. North America 29:1217-1230, Sept. 1945.
2. Bruch, H.: Psychiatric aspects of obesity in children. Am. J. Psychiat. 99:752, March 1943.
3. Bruch, H.: Obesity in children; physical growth and development of obese children. Am. J. Dis. Child. 58:457-484, Sept. 1939.
4. Bruch, H.: Obesity in relation to puberty. J. Pediat. 19:365-375, Sept. 1941.
5. Schonfeld, W. A.: Primary and secondary sexual characteristics; study of their development in males from birth through maturity with biometric study of penis and testes. Am. J. Dis. Child. 65:535-549, April 1943.
6. Johnston, J. A.: Nutritional requirement of the adolescent and its relation to the development of disease. Am. J. Dis. Child. 74:487-494, Oct. 1947.
7. Shorr, E.: Endocrine problems in adolescence. J. Pediat. 19:327-346, Sept. 1941.
8. Johnston, J. A.: Factors influencing retention of nitrogen and calcium in period of growth; calcium and vitamin D requirements of older child. Am. J. Dis. Child. 67:265-274, April 1944.
9. Kunstadter, R. H.: Experience with benzedrine sulfate in management of obesity in children. J. Pediat. 17:490-501, Oct. 1940.

Irradiation of Tracheobronchial Lymph Nodes

ROGER ABBOTT PETERS, D.O.

Oakland, Calif.

In the newborn, the bifurcation of the trachea is situated at the level of the third thoracic vertebra. With increasing age there is a gradual shift to a lower level. In children the angles formed by the primary bronchi with the trachea vary considerably. The angle of divergence is greater on the left side than on the right. These angles are increased during expiration and decreased during inspiration. The pulmonary artery and its branches follow the bronchial tree in all its subdivisions.

Large groups of lymph nodes are situated at the bifurcation of the trachea and along the major bronchial branches. True lymph nodes are usually found in the angles of the bronchial branchings only in the mesial portion of the lungs. In the lower segments the lymph nodes are larger and they extend further along the bronchial radicles.

In my opinion not all lymph node enlargements are due to tuberculosis; in fact, my findings indicate that only a small number can be attributed to that cause. Simple hyperplasia has often been mistaken for tuberculosis. Indeed, the differential diagnosis offers a difficult problem, which is not surprising in view of the fact that tuberculosis begins as hyperplasia. In some instances animal inoculation is necessary for diagnosis.

It is evident that lymph glands can enlarge quite rapidly and in the young infant can become very embarrassing to respiration, deglutition, and circulation. The symptoms of glandular enlargement of the tracheobronchial lymph nodes can be understood readily by the appreciation of the limited space involved and the vital structures that are found in the vicinity of the mediastinum.

The effects of irradiation in this are most marked on the lymph nodes. It is evident that some of the glandular tissue can be destroyed and the remainder surrounded by firm fibrous tissue. This is derived partly from a direct irradiation effect on the existent connective tissue and partly from an inflammatory response to cell injury and destruction.

CASE REPORTS

Case I: Female, weight 6 pounds, 14 ounces, height 20 inches, was born January 2, 1947. The birth was normal. On examination she was found to have mottling of the skin (pink and blanched areas of the body and extremities on crying). She would not sleep on her stomach. There were some muffled alteration of crying sound, some regurgitation, and restlessness during sleep.

X-rays, anteroposterior and lateral, were taken of the chest to ascertain any lymph node enlargement. The following report was made: "Anteroposterior view shows a lobe of thymus reaching down over the right heart, and the upper mediastinum is enlarged on the left, with the shadow overlapping the heart. The lateral view shows no clear space above the heart. The trachea seems deviated slightly but is not constricted. Some enlargement of lymph nodes in the lower segments, extending along the right bronchial radicles."

It was decided to delay irradiation therapy a few months to see if the nodes would regress spontaneously. By September, all symptoms had progressed to a critical point. X-rays were taken and irradiation treatments started. X-ray report was as follows: "Two views of the tracheobronchial nodal system show enlargement since February and the enlargement is noted laterally, anteriorly, and posteriorly."

X-rays were taken in November and the following report was given: "The anteroposterior view certainly shows some improvement and diminution in the size of the nodes. The lateral view is not clear above the heart yet, but no tracheal compression is found."

At the time this was written, all clinical symptoms of distress had cleared up.

Case II: Female, weight 7 pounds, was born January 9, 1947. Birth was normal. On February 1 the infant developed clear-cut signs of mediastinal pressure. X-rays were taken February 4, 1947, and the following report was given: "Anteroposterior and lateral views show enlargement of tracheobronchial lymph nodes. The trachea shows exaggerated angulation, but there does not seem to be any pressure on it."

Three irradiation treatments were given. The baby showed good response. X-ray pictures taken April 16, 1947, showed very slight, if any, regression of the enlarged lymph nodes. However, they were not any larger than in the previous x-ray, and, since the clinical improvement was so marked, no further irradiation was given.

SUMMARY

Two patients with tracheobronchial lymph node enlargement are cited as examples of what can be accomplished by irradiation therapy.

460 Staten Ave.

REFERENCE

Caffey, J.: Pediatric x-ray diagnosis. Year Book Publishers, Inc., Chicago, 1945, pp. 211-216.

Diet in Illness: Oral and Parenteral*

WILLIAM S. SPAETH, D.O.
Drexel Hill, Pa.

Special attention to diet in illness is essential because the speed of recovery often parallels the adequacy with which nutritive requirements are met. These requirements are difficult and at times impossible to meet in the presence of anorexia and lowered digestive function, such as vomiting, diarrhea, or both.

In febrile states, the metabolism is increased in direct proportion to each degree of fever, and all nutritional elements—fluid, electrolytes, vitamins, and calories—must be kept at least at minimal levels. Proteins and carbohydrates are usually well tolerated while fats are not and, therefore, must be kept at minimum required levels.

In the absence of vomiting and diarrhea, adequate food and liquids are usually consumed. Anorexia, however, is often a problem which should not be too alarming in the first 24 to 48 hours. While a child will refuse food, he usually will take liquids. Fluids should be offered orally every hour he is awake in the quantity he desires; mild vomiting is no contraindication.

The fluids may be served warm or cold but not ice cold and should consist of fruit juices, lemonade, orangeade, ginger ale, carbonated water, and vegetable juices. Caloric values are increased by the addition of glucose, dextrose, or honey to the various servings of liquids. Skim milk, egg yolk, and dextrose make a nutritious drink. On the second or third day junket, jello, beef juices, cereal gruel, and cream soups may be added to the child's diet.

Minimum vitamin intake is to be maintained during illness. Nelson[1] recommends that water-soluble vitamins C and B should be given in increased amounts during acute illness. Any forcing of food in the presence of reduced digestive function only institutes complications, such as anorexia—which is so prevalent today—and defeats one's intentions. Weight loss during illness is usually quickly regained during convalescence.

The breast-fed infant should be given water from a bottle or a spoon before feedings,[2] otherwise, due to thirst. he overeats of breast milk and vomiting occurs. In the severely ill infant, the mother's breast should be pumped and the milk diluted one-third with boiled water and the infant fed by gavage.

In the artificially fed infant, the formula should be reduced one-half with boiled water or else made with skim milk.

As soon as the acute symptoms subside and the convalescent period begins, the child's appetite usually returns—there being a request for food. This is the natural indication for the return to a full diet.

Morris Ant[3] recommends that where the fever has been high, a high dosage of cevitamic acid be added to the diet during convalescence. Also, where the disease has been accompanied by a rash, a high vitamin A content should be included in the child's diet.

It is to be remembered that life depends upon the function of the body fluids to transport nutrients and excretory materials and to regulate body temperature and chemical balance. The loss of fluids, particularly in the infant, is more dangerous, because the loss of electrolytes, circulating blood plasma, and red cells occurs more rapidly at this age. Approximately half of the acutely ill infants that are brought to the hospital are dehydrated and in an early stage of acidosis or alkalosis and require parenteral fluid containing electrolytes.

Dehydration requires fluid replacement, but with the loss of water there is also a loss of electrolytes and, at times, protein. Vomiting causes not only a loss of fluid, but also a loss of hydrochloric acid in the gastric secretion, which when severe results in alkalosis. In diarrhea, there is a considerable loss of body fluids and electrolytes, producing a dangerous disturbance of acid-base balance as well as dehydration. The alkali base loss is greater than the acid salts and acidosis results. In hemorrhage, there is a loss of red cells as well as fluid in the form of plasma.

The problem is not just the replacement of water, but also the replacement of electrolytes, protein, and red cells and the correction of acid-base balance. The choice of the parenteral fluid needed for the particular case in question is an important one and, at times, a difficult one requiring a careful study of the child's physical condition and of laboratory findings.

In alkalosis there is a loss of acid or the accumulation of excess base in the body. The excessive base retention may be due to a respiratory disturbance interfering with the carbon dioxide control,[4] hyperventilation of encephalitis, or drugs such as aspirin. The diagnosis of alkalosis is based on clinical evidence (numbness, tingling sensation, headache, stupor, tetany, convulsions, apnea. and dehydration) and the pH of the blood plasma. As soon as the diagnosis of alkalosis is established, physiologic saline should be given to correct the condition, as the body retains the chloride, excreting the excess sodium through the urine and excreting HCO_3 instead of chloride until the chloride deficit is compensated.[5] When there is marked dehydration and large quanitities of fluids are needed, Ringer's solution, with its potassium, magnesium, and

*Presented before the meeting of Region I, American College of Osteopathic Pediatricians, New York City, April 2, 1948.

calcium, is more physiologic as it prevents the dilution of other electrolytes. When sufficient carbohydrates are not taken orally, due to vomiting, sodium lactate or glucose, 5 per cent, can be added to Ringer's solution. This is known as Ringer's sodium lactate solution or Hartmann's solution.

Acidosis is a more common condition and occurs in nephritis, diabetes, diarrhea, dehydration, starvation, and other morbid states.† It is due to a loss of base or an excessive intake of acid or retention of acid in the body. Respiratory acidosis occurs from retention of carbon dioxide in the blood plasma by prevention of its escape into the alveolar air or from the lung, as in asthma, asphyxiation, apnea due to drugs, or pulmonary edema.[4] The diagnosis of acidosis is made by careful appraisal of the physical findings and laboratory estimation of the pH and carbon dioxide-combining power of the blood.

The degree of acidosis will depend upon the etiologic factors. In severe acidosis, sodium bicarbonate is the solution of choice as its action is more rapid and because quick action is necessary to prevent tissue damage. While awaiting laboratory result of the pH and carbon dioxide-combining power of the plasma or in mild acidosis, 1/6 molar sodium lactate solution can be given subcutaneously with relative safety.

The amout of sodium bicarbonate needed to correct the base deficit is calculated as follows:

One gram of sodium bicarbonate per kilogram of body weight will increase the plasma bicarbonate by 17 meq. per liter, or 38 volumes of carbon dioxide per 100 cc.

As an example, if the carbon dioxide content of the blood is 13 volumes per 100 cc., and the body weight is 9 kilograms, the dose of sodium bicarbonate required to bring the plasma bicarbonate to 60 volumes per 100 cc. or 26.6 meq. per liter, would be calculated as follows:

Formula: Carbon dioxide deficit times body weight times factor (0.026) equals dosage of sodium bicarbonate.

Applying this formula to our example: The carbon dioxide deficit is 47 volumes (60 minus 13 equals 47). Forty-seven (deficit) times 9 (kilograms body weight) times 0.026 (factor) equals 10.452 grams of sodium bicarbonate required to bring the plasma bicarbonate to 60 volumes per 100 cc.

Since the restoration of fluid balance eliminates some of the organic acid metabolites, it is safer therapy to use only a half of this dose and repeat it later if acidosis is not corrected. One should keep in mind that alkalies are dangerous to give without the determination of the carbon dioxide-combining power of the blood.

Plasma protein is an important constituent of the blood, as it has to do with the regulation of osmotic pressure.[7] The pressure of the heart maintains a higher hydrostatic pressure on the arterial side of the capillary bed and as a result of this higher arterial pressure a fluid like plasma, lacking only some nondiffusible protein, passes into the intracellular spaces; while on the venous side of the vascular system, the plasma protein exerts an osmotic pull, which is unopposed and the fluid returns to the venous capillaries and veins.

†Acidosis symptoms vary with underlying disease. Hyperpnea is present when bicarbonate is reduced to less than half of normal, also restlessness, headache, nausea, drowsiness, meningismus, and coma.

The parenteral administration of protein in the form of amino acids is at times necessary and may be given intravenously or subcutaneously. Amino acids are indicated when children, for some reason, will not take sufficient protein orally, or when there is an obstruction of the intestinal tract by esophageal or pyloric stenosis, intussusception, atresia of the bowel, volvulus, or peritonitis. Also amino acids are indicated in post-operative cases, when the intestinal tract should be kept at rest or when assimilation is interfered with as in protracted diarrhea or colitis, or in pancreatic disease when protein can not be properly split. In nephrosis, amino acids have not been effective in correcting plasma protein levels, but have aided in the maintaining of positive nitrogen balance and protein synthesis.

The diagnosis of hypoproteinemia or protein deficiency is based on blood serum protein and physical signs of edema. Mild protein deficiency can be corrected by a diet high in protein, consisting of a quart of milk, one or two eggs, and 2 ounces of meat daily, returning to normal maintenance diet as soon as blood serum protein is normal.

In the more severe cases of hypoproteinemia, the protein deficiency can be corrected by parenteral administration of amino acid. The quantity administered depends upon the size of the patient and the severity of the deficiency. One gram of amino acid per kilogram of body weight each 24 hours is needed to maintain nitrogen balance. It is administered intravenously in a 5 per cent solution and must be injected slowly at the rate of 1 cc. per minute to an infant and not faster than 5 cc. per minute to an older child. Amino acid may be also given subcutaneously by using an isotonic solution of 3⅓ per cent amino acid, 3⅓ per cent glucose in ⅓ strength of Ringer's solution.

When acidosis is also present, it should always be corrected first. Blood plasma, because of its high protein content, is used in the treatment of hypoproteinemia and has the added advantage of containing all the electrolytes. The dry form can be reliquefied half strength and used in hemodilution when a small quantity of fluids is to be used.

The most specific use of blood plasma is in shock, where there is hemoconcentration. It quickly replaces the volume of circulating fluid, dilutes the red cells, and corrects the osmotic pressure.

Blood plasma cannot take the place of whole blood transfusion, as it contains no red cells. Whole blood transfusion is used specifically in the replacement of blood lost due to hemorrhage and in the replacement of red cells lost in various anemias, congenital or acquired. The indication for transfusion is when the hemoglobin drops to 8 grams per 100 cc. of blood. The blood is typed, cross-matched, and the Rh factor determined before giving to any child. The amount to be given is 10 cc. per pound of body weight for a child up to 2 years and less after 2 years, at a single infusion.

The general rule for the quantity of fluid required by an infant up to 1 year is 3 ounces per pound of body weight in 24 hours. A child over 1 year will require from 1,500 to 4,000 cc. in 24 hours, depending on the age, weight, and degree of fluid loss, the hemoconcentration, and skin turgor. When intravenous parenteral fluids are to be used, it is best not to exceed 10 cc. per pound of body weight at one infusion and not to administer faster than 10 cc. per minute.

The volume and rate of subcutaneous injections are limited by absorption of the tissue. Subcutaneous

fluids, therefore, may be given constantly and in volume to approximate the 24 hour requirements of the child.

SUMMARY

1. Diet for the sick child has a definite value and is reflected in the rapidity of the child's recovery.
2. Vitamins are necessary in illness as well as in health.
3. Forced feeding is just as harmful as underfeeding.
4. Attention to the intake and output of fluid is important in all illness.
5. Parenteral fluids are indicated when fluid cannot be given orally and where there is a great loss of body fluids.
6. There are times when parenteral fluids are harmful, as in the presence of cardiac failure with edema and failing renal function with edema.
7. The selection of parenteral fluids is based on the physiological state of the child, determined by the physical examination and the laboratory findings.
8. The pediatrician should be ever alert for the symptoms of dehydration, alkalosis, acidosis, and hypoproteinemia.
9. It is a grave error to administer a large quantity of fluids where hemodilution already exists or a concentrated solution when hemoconcentration is present. The specific gravity of the solution to use is in direct reverse to the specific gravity of the blood.
10. Today, a child can be kept alive on complete diet through parenteral fluids containing amino acid, glucose, and Ringer's solution.

2804 Hillcrest Rd.

REFERENCES

1. Nelson, W. E.: General factors in treatment, in Mitchell-Nelson's Textbook of pediatrics, edited by W. E. Nelson. Ed. 4, revised. W. B. Saunders Co., Philadelphia, 1945, pp. 201-204.
2. Griffith, J. P. C., and Mitchell, A. G.: Textbook of pediatrics. Ed. 3. W. B. Saunders Co., Philadelphia, 1941, p. 157.
3. Ant, M.: The modern dietary of the child, in Therapeutics of infancy and childhood, edited by H. R. Litchfield and L. H. Dembo. F. A. Davis, Philadelphia, 1942, p. 507.
4. Guest, G. M.: Disturbances of fluid and electrolyte equilibrium, in Mitchell-Nelson's Textbook of pediatrics, edited by W. E. Nelson. Ed. 4, revised. W. E. Saunders Co., Philadelphia, 1945, pp. 163-172.
5. MacBryde, C. M.: Dehydration, in Signs and symptoms, edited by C. M. MacBryde. J. B. Lippincott Co., Philadelphia, 1947, pp. 205-223.
6. Marriott, W. M.: Serious nutritional and digestive disturbances in infancy, in Practice of pediatrics, edited by J. Brennemann. W. F. Prior, Inc., Hagerstown, Md., 1942, Vol. I, Chap. 28, pp. 10-13.

ADDITIONAL REFERENCES

Bartram, J. B.: Administration of parenteral fluids, in Mitchell-Nelson's Textbook of pediatrics, edited by W. B. Nelson, Ed. 4, revised. W. B. Saunders Co., Philadelphia, 1945, pp. 175-182.
Brennemann, J.: Diet in infection, in Practice of pediatrics, edited by J. Brennemann. W. F. Prior, Inc., Hagerstown, Md., 1942, Vol. I, Chap. 13, p. 8.
Nelson, W. E.: Nutritional edema, in Mitchell-Nelson's Textbook of pediatrics, edited by W. E. Nelson. Ed. 4, revised. W. B. Saunders Co., Philadelphia, 1945, pp. 276-278.

Tonsils In or Out*

F. MUNRO PURSE, D.O.
Narberth, Pa.

The tonsils have assumed an important role in the economy of the child during the past 30 years. The beneficial results following tonsillectomy in selected cases inspired this procedure in many children. However, its benefits have been distorted by physicians and laity alike who have been too ready to attribute all sorts of complaints and ills to tonsillar involvement and who have not been sufficiently critical of need for tonsillectomy when recommending or asking for it. Fortunately a more critical and conservative attitude is developing, for 85 deaths occur annually from tonsillectomies in children under 15 years of age.

Unlike the development of knowledge regarding most organs, there has been no definite information regarding the tonsils, nor have any salient and directional discoveries been made to indicate their function or, for that matter, their constitution.

The tonsils are developed from the dorsal angles of the second branchial pouches. The entoderm which lines these pouches grows in the form of a number of solid buds. These buds become hollowed out and by casting off their central cells the tonsillar crypts, twelve to fifteen in number, are formed. These open on the medial surface of the tonsil. Lymphoid cells accumulate around the crypt and become grouped to form the lymphoid follicles. These follicles are surrounded closely by a plexus of lymphatics, from which the lymphatic vessels pass to the deep cervical glands. These vessels are usually three to five in number and end in a node on the internal jugular vein. Each tonsil, therefore, consists fundamentally of an aggregation of lymphoid tissue, but it only forms a portion of the circular band of tissue which guards the opening into the digestive and respiratory tubes.

The arteries supplying the tonsil are the dorsalis linguae from the lingual, the ascending pharyngeal from the external carotid, and the descending palatine branch of the internal maxillary. The veins end in the tonsillar plexus on the lateral side of the tonsil. The nerves are derived from the middle and posterior palatine branches of the maxillary, from the glossopharyngeal, the maxillary nerve or second division of the trigeminal (fifth cranial or trifacial), and the glossopharyngeal or ninth cranial nerve.

The tonsils of a child from birth throughout puberty are relatively (frequently absolutely) larger than in the adult. After puberty the imbedded third diminishes considerably in size and the tonsil assumes a disk-like form, flattened from side to side. It is rather difficult to understand how an organ with an abundance of lymphatic tissue and blood supply, present in all mammals, should be without function.

Physiologically, there are many theories concerning the function of the tonsils. That the maximum development of the tonsils should coincide with the period in childhood of greatest increase in height and weight, has been thought by some to point definitely to a function of defense against the invasion of pathogenic micro-organisms. The theory that the external lymphoid masses manufacture toxin, allowing it to be absorbed as necessity demands so that by autoimmunization the child's resistance to air- and food-borne infections may be gradually increased, has fallen short of actual demonstration. Much literature has been produced to prove that the tonsil has a function as a filtering station for the lymphatics of the nasal, and

*Presented before the annual convention of the Oklahoma Osteopathic Association, Oklahoma City, October 11, 1946.

part of the buccal, mucosa in which infectious agents are deposited, thereby purifying the blood. The theory that the tonsil plays an important role in immunizing the body against invasion and multiplication of virulent organisms is supported by some as is the theory that the tonsil may participate in the regulation of growth by some internal secretion, probably in conjunction with the thyroid gland.

The removal of one hundred thousand tonsils each year, in our opinion, indicates that physicians are still unable to agree on the tonsillar function. The decision should rest with the experience of the physician, on the estimate of all factors which contribute to the well-being of the individual, and on the experience of others. The writer is therefore attempting to set down certain qualifications which must be met before the physician recommends tonsillectomy.

In discussing this question, there are generalizations which must be kept in mind: Enlargement of the tonsils and adenoids are more common in boys than in girls and in both sexes between the ages of 4 and 8 years. The method of upbringing in infancy is not a factor in the development of enlarged tonsils and adenoids, but there is an inherited predisposition to hypertrophy.

Conditions within the tonsil which indicate tonsillectomy are difficult to determine. There is no certain way to demonstrate by direct observation whether tonsils are or are not harboring chronic infection of an order which would justify their removal. The consistency and size of the tonsil and the presence of cheesy material within the crypts are not reliable guides. Amazing hypertrophy to the point of meeting in the midline, obstructing swallowing and breathing when the throat is examined, may be only the result of a recent acute infection. Material which looks like pus when the tonsil is squeezed may be only discarded epithelial debris. The bacterial flora present is of little aid in deciding whether or not the tonsil should come out. Therefore, it has been the practice of the writer to base his local indications upon a history of repeated tonsillitis, abscess within the tonsil, epidemic streptococcic sore throat (proved by culture), tuberculosis, a diphtheritic condition, Vincent's infection, or halitosis due to tonsil infection. Under such conditions, it is advisable to have the tonsils removed, with the expectation that 50 per cent of the children so treated will be materially improved in health.

Conditions adjacent to the tonsils which indicate tonsillectomy are the persistent reddening of the anterior pillars, continued enlargement of the node just below and slightly in front of the angle of the jaw, and peritonsillar or retrotonsillar abscess. Within the range of the ear, such conditions as repeated attacks of acute catarrhal and suppurative otitis media call for operative procedure, as do inner and middle ear deafness due to tubal obstruction, for deafness is present sixteen times more frequently in the child with tonsils than in the one without them. Iritis and retinitis may be relieved by tonsillectomy.

There is a difference of opinion in regard to the value of tonsillectomy for sinusitis. While the physician who recommends removal prior to other treatment is not to be condemned, he will be wise if he does not promise relief from sinusitis. In many instances the simple removal of adenoids is more apt to be indicated than tonsillectomy.

In the absence of hay fever, nasal allergy is frequently undiagnosed and tonsillectomy is often recommended because the symptoms have been mistaken for those of infection. Children with nasal allergy and allergic involvement of the sinuses are not favorably influenced by tonsillectomies. Although this procedure is indicated in certain patients with nasal allergies, the indications should be the same as for those children without nasal allergies. The operation should not be performed during the hay fever season.

There appears to be a definite relation between dental caries, speech defects and malshaped mouths in those children whose pharyngeal cavities are filled with adenoids. Repeated attacks of pharyngitis are stopped by tonsillectomy. The sequence of infection seems to be from the tonsil to the cervical node so that children with enlarged tonsils and adenoids often have enlarged cervical glands. Therefore, inasmuch as the tonsils seem to be the portal of entry, their removal may reduce the incidence of disease, particularly tuberculous infection.

The principal general systemic disturbances and focal infections some distance from the tonsils for which tonsillectomy is frequently recommended and for which there may be some justification should be enumerated.

It has been almost universal practice to perform tonsillectomy and adenoidectomy in the rheumatic patient, in the quiescent stage, with the hope of decreasing frequency and severity of upper respiratory tract infections and avoiding rheumatic flareups. Analysis of the effects of tonsillectomy on the course of rheumatic infection has shown that tonsillectomy does not prevent recurrences of rheumatic manifestations. Neither presence nor absence of tonsils at the time of the initial infection, nor removal of tonsils subsequent to onset has any demonstrable influence on the incidence of cardiac involvement or death rate, when due consideration has been paid to the associated variable statistical factors. A high incidence of rheumatic exacerbations followed immediately on tonsillectomy performed early in the course of the disease.

Tonsillectomy for the rheumatic child seems to be indicated only when there is definite evidence of disease in the tonsils and not as routine procedure. The operation should be performed only during an inactive phase of the infection. In the absence of other symptoms, the combination of a normal temperature curve and normal erythrocyte sedimentation rate may be taken as indications of an inactive phase. In all instances, irrespective of the evidence of active infection, it is the writer's policy to prescribe sulfamerazine, because of its slower rate of excretion, in full dosage for 24 hours prior to operation to secure an adequate level in the blood. The drug is then discontinued until the child is again taking fluids in adequate amounts, usually 24 hours postoperatively, when it is started again for a period of 2 to 4 days, depending upon the individual case.

There is discussion as to whether tonsillectomized patients are more susceptible to poliomyelitis than children with tonsils. In one study, it was found that there was 7.5 per cent of bulbar poliomyelitis in the group without tonsils and only 3.3 per cent in the group with tonsils. Eighty-two per cent of patients who had had tonsillectomies within 30 days of the onset of the disease developed bulbar paralysis and only 39 per cent of those who had been operated on more than 30 days previous to onset of the disease. There is a greater tendency toward involvement of the higher centers in poliomyelitis in patients without

tonsils and adenoids in all age groups, but it is least pronounced in those over 15 years of age. In the infant to 5-year group, only 8 per cent of the nontonsillectomized patients, against 42 per cent of the tonsillectomized, had bulbar symptoms. In the 6 to 10-year group the ratio was 16 per cent to 34 per cent, and in the 11 to 15-year group it was 10 per cent to 33 per cent. There is some disagreement as to whether the disease occurs because the virus is present at the time of operation or whether the tonsils act as a protective barrier.[1]

The answer to the question as to whether a child develops poliomyelitis during the poliomyelitis season in nonepidemic years following tonsillectomy is that its occurrence is minimal, but when it does occur it is serious. The ratio is 1 case to 2000 operations. The possibility of the disease developing after these operations in the other 8 months of the year is negligible. Accordingly, as a preventive measure, boards of health are recommending that operations on the nose and throat be avoided whenever possible during the poliomyelitis season, June to October, except in Texas and California where the period is from June to December.

Tonsillectomy should be postponed in the patient with glomerulonephritis until the acute phase has subsided. Here again the decision for operation rests upon the possibility of the tonsils being foci of infection. Tonsillectomy should not be rushed into as a panacea. Re-examination of children from 1 to 12 years old, after the onset, suggested that those children who had their tonsils removed had fared no better than those whose tonsils were still intact. Conclusions are: (1) That tonsillectomy does not prevent nephritis but may predispose to it; (2) that tonsillectomy does not cure nephritis or prevent it from progressing to the chronic stage; and (3) that tonsillectomy may cause nephritis.

Children with nasal allergy, allergic involvement of the sinuses, allergic bronchitis, and allergic pneumonia are not favorably influenced by tonsillectomy. In fact, the removal of the tonsils for infections in the respiratory tract below the pharynx is not justified.

Removal of tonsils and adenoids as a cure for recurrent colds is frequently disappointing. By this misapplication of the focal infection theory, myriads of innocent tonsils and adenoids have been removed. Temporary improvement may be noted, for by operation an infection will have been removed, but it is by no means certain that this initial result will be permanent.

In the relatively frequent development of adiposity following removal of tonsils and adenoids, attention should be drawn to the possibility of Fröhlich's syndrome. The peculiar fat distribution, retarded genital development, and characteristic metabolic pattern prove that the symptoms in these cases are of the same order and pathogenesis as those in ordinary cases of Fröhlich's syndrome. Consideration should be given to the possible connection between pharyngeal surgery and subsequent pituitary disease. The sudden gain in weight following surgery may not be entirely due to the removal of a focus of infection which has been producing considerable retardation in the physical development of the child.

Retardation in education has been known to be caused by enlargement of the tonsils and adenoids. The change in mentality after removal of diseased tonsils is striking in some patients. However, it must be borne in mind that although all infected tonsils demand removal, striking change is exceptional.

An attempt has been made to enumerate the conditions which are or are not helped by tonsillectomy, and to set standards which must be met before this operative procedure can be recommended. Regardless of which theory one believes regarding the function of the tonsils, it is hard to conceive that an organ which is so heavily endowed with lymphatics and blood supply could be without function.

It has been the practice of the writer to record the reason or reasons for recommending tonsillectomy. In reviewing this material many instances were found where previously we had advised against operation, only to recommend it later because of inability to maintain or regain normal function of the tonsil.

If it is believed that the normal tonsil is definitely not only useful but indispensable to the child, what can be done to preserve it throughout its useful period? Prophylactic therapy includes the maintenance of the highest state of nutrition possible and protection against certain known respiratory infections and infectious diseases for which prophylactic measures are known. In view of the fact that vitamin C metabolism may be influenced by infections and that there may be some measurable increase of infection in persons who show deficient amounts of vitamin C in the blood, 300 to 500 mg. of vitamin C are given daily. Daily ingestion of a reasonable amount of orange juice does not assure a high blood level of vitamin C in all instances, although when generous amounts of all juices are taken the level is uniformly in the average zone. Because it seems that the metabolism of vitamin C varies greatly in children, the writer advises the use of the crystalline form in addition to the use of juices.

Osteopathic manipulative therapy to the posterior and anterior cervical areas, in the form of tissue relaxation and mandibular drainage, is used as often as necessary to maintain the best possible physiological relaxation. This varies, in our experience, from twice weekly to twice monthly throughout the year.

Following any upper respiratory infection additional manipulative therapy is given to return the structures to their normal function as soon as possible. If successful in shortening the duration or frequency of respiratory infection and thereby eliminating the symptomatology which calls for tonsillectomy, this therapy is continued for another year. If the second year is unsuccessful, therapy is discontinued and operative procedure is recommended. As long as health is maintained, therapy is continued.

The third and perhaps the hardest portion of prophylactic therapy is convincing or educating parents that the removal of tonsils is not a panacea for all ills. Parents are all too easily swayed by the beneficial results obtained in selected cases. The utmost tact and professional skill is necessary in many instances to obtain their consent to use conservative measures.

In conclusion, the place of x-ray therapy for the pathological tonsil seems to be only in those children whose general condition would be affected deleteriously by operative procedure.

127 Elmwood Ave.

REFERENCE

1. Lucchesi, P. F., and La Boccetta, A. C.: Relationship of tonsils and adenoids to type of poliomyelitis. Am. J. Dis. Child, 68:1-4, July 1944.

Acute Diseases of Childhood*

E. JANE CUNNINGHAM, D.O.
Flint, Mich.

Differential diagnosis is often the most difficult aspect of a case. The importance of an accurate history cannot be overstressed. It may seem a waste of time to listen to the mother's detailed description of the way her child came down with his illness and all the little things that have happened to him since birth, but somewhere in this long recital is often the key to an accurate diagnosis. A good many times, if allowed to talk, the mother will make the diagnosis for you, especially with her recital of the history of exposure. On the other hand these histories can be very confusing and what the mother is sure is measles may be almost anything from heat rash to a drug reaction.

ACUTE SORE THROATS

A large percentage of the children seen have acutely inflamed throats. It must be remembered that many of the acute diseases start with some sore throat. It may be part of an acute enteritis, a streptococcic infection, diphtheria, scarlet fever, or measles. The question is whether it will clear up without heroic measures or will develop into otitis with all the possible complications.

All of the acutely ill children we see receive osteopathic manipulative therapy. Some of them like it; most of them do not. Most of the parents appreciate it; some of them do not. Some of them object to the baby's being forced to do anything to which it objects. Most parents call an osteopathic pediatrician because they want osteopathic manipulative therapy and are not satisfied with routine medical care. The majority of parents who are not acquainted with osteopathic treatment will appreciate the extra care given the child and a few minutes' explanation will often make osteopathic boosters.

Most of the milder sore throats will clear up in a few days with or without treatment of any kind. Naturally with osteopathic manipulative treatment, rest, and forced fluids a larger percentage of them will be entirely well in a few days. However, whenever there is doubt as to whether or not the middle ear is involved, I use one of the sulfa drugs or penicillin. Because of the relative inexpensiveness of the sulfa preparations, they are used routinely unless the child has had reaction to sulfonamides, or is unable or unwilling to take sufficient fluids.

The milder intestinal infections which complicate the sore throat—or vice versa—are handled by simple remedies as the symptoms warrant. In vomiting, for instance, all food is withheld and soda water (1 teaspoonful to 8 ounces of water) is given by teaspoon doses every 10 minutes until the entire 8 ounces are retained; then large amounts of soda water, tea, or ginger ale are given. Repeated soda enemas seem to hasten the clearing of the intestinal symptoms. However, if the diarrhea is at all severe, it may be necessary to use one of the sulfa preparations, kaopectate, kaomagma, or a combination product as cremosuxidine. The classic diet is used. All foods are withheld for a variable length of time, then rice water, Mellin's food mixture, jello water, teas, and toast are used as symptoms clear. The banana diet is effective, but bananas are still not always obtainable.

STREPTOCOCCIC INFECTIONS

In our community it seems the general practice for any severe throat infection to be classified as "strep throat." It can be appreciated that it is not practicable in general practice to culture material from every sore throat and without so doing an accurate diagnosis is difficult. However, in our practice patients with very acute sore throats and high temperatures are given, in addition to osteopathic manipulative therapy, one of the sulfa preparations or, when it is not tolerated, penicillin.

DIPHTHERIA

In a community where a high percentage of the children are inoculated against it, diphtheria is a very rare disease. Each summer itinerant workers in our beet fields, etc., bring in, among other things, an occasional case of diphtheria. Despite the rarity it has always to be borne in mind in the presence of severe throat inflammation with a membrane. Cultures should be made routinely in any case where there is a reasonable doubt, i.e., if the child has not had toxoid within the past 3 years and a membrane and high temperature are present.

Whenever diphtheria is suspected antitoxin should be given at once, and the diagnosis established later. The dosage of antitoxin for the treatment of diphtheria should never be less than 5,000 units, and it is probably never necessary to give more than 40,000 units, particularly if one-half is given intravenously. The average dose for a comparatively early case of faucial diphtheria is 10,000 units intramuscularly. The total amount of antitoxin needed should be given at the first injection. A child should receive practically as much as an adult because, although the body is smaller, the disease in the child is relatively more severe. Indications that enough antitoxin has been given can usually be detected within 12 hours after its administration. They include the findings that the membrane has not spread but is growing smaller, and that the patient feels generally better and has less fever. If these indications are not present, more antitoxin should be given, but a second dose of antitoxin is a confession that not enough was given in the first dose. In recent literature penicillin has been recommended for use in conjunction with antitoxin to eliminate some of the complications, but in no case is it to be used in place of antitoxin.

SCARLET FEVER

The typical case of scarlet fever is not hard to diagnose after the rash appears, but before the appearance of the rash, and even later in very mild cases, it is sometimes impossible to make a definite diagnosis. Especially is this true in regard to the differential diagnosis of German measles and scarlet fever. Since in our community there is no longer a quarantine for scarlet fever, it is not quite so urgent that a differential diagnosis be made promptly. When small doses of sulfa are given routinely there seem to be fewer com-

*Presented at the Pediatric Teaching Group, Fifty-First Annual Convention of the American Osteopathic Association, Chicago, July 24, 1947.

plications than formerly when symptomatic treatment only was used.

MEASLES

The differential diagnosis of measles is usually aided by the fact that the disease occurs in epidemics with typical cough, eye symptoms, and velvety raised rash. However, a typical sulfa rash may be very similar to measles and if cough, fever, etc., have been present for a few days it is sometimes impossible to say whether the patient has measles or a reaction to the sulfa given before the rash appeared.

Measles can be a very severe disease, especially in infants. The use of immune globulin has been very successful in preventing or modifying the disease and it is recommended in all known exposures and should be insisted upon for all infants. The various rashes are sometimes very puzzling. When I hear the statement, "I've had measles at least five times," I wonder how often it was an allergic rash. How many children are given aspirin for fever who later develop a rash which is called "measles"—not to mention the sulfa rashes of the last few years?

SMALLPOX

The differential diagnosis of smallpox and chickenpox is fortunately a rare necessity during the past few years. The presence of a good vaccination scar, particularly if not many months old, is a strong argument against the diagnosis of smallpox. The reliable history of a very recent immune reaction to vaccination practically eliminates the possibility of smallpox. The prodromal eruption occasionally seen in smallpox may be quite similar to the prodromal eruption of measles or to the true eruptions of scarlet fever or of other toxic conditions. Further developments of an illness will usually clarify the diagnosis. Severe measles with a confluent hemorrhagic eruption and marked constitutional manifestations may bear a strong resemblance to the hemorrhagic forms of smallpox. The pustular eruption sometimes found in syphilis may cause confusion with the eruption in mild smallpox. The systemic manifestations of syphilis are much more indefinite in onset and the eruption appears more gradually. The pustular syphilid rarely attacks the palms and the soles, is quite varied in character and chronic in course, and is more coppery in color. Blood tests will be positive for syphilis, and spirochetes can be found.

Impetigo, pemphigus, acne, furunculosis—all may each bear some similarity to smallpox. There is no specific drug for the cure of smallpox nor other specific remedy in general use. The sulfonamides and penicillin have been used with some success.

CHICKENPOX

Chickenpox is seen very frequently and the diagnosis is rarely difficult. The lesions usually appear first on the skin and in the scalp where they are frequently found as small lumps against which the comb strikes. The lesions may be seen to involve the mucous membranes of the mouth where they appear most often on the soft palate, usually as small crater-like ulcers surrounded by a small areola of inflammation. Lesions are also situated occasionally on the inner surface of the eyelids, where they cause considerable distress from itching. The external auditory canal may be involved and pain caused from the swelling. In women the mucosa of the vulva may be the site of lesions which produce itching and possible painful urination if the urethral orifice is involved. Children should be kept in bed while the temperature is elevated, but allowed to be about the house and yard later in the course of the disease if isolation can be enforced. Usually the only treatment needed is something to control the itching, such as carbolated vaseline or calamine lotion, and aspirin for extreme restlessness.

The lesions of herpes zoster and chickenpox may resemble each other quite closely, but usually the lesions in herpes zoster are grouped along the line of the affected nerve or nerves, whereas in chickenpox there is a generalized eruption. Pain is nearly always a marked symptom in cases of herpes zoster, but does not occur in chickenpox. The former is rare in childhood, and the latter does not usually occur in adults.

The possible etiological relations of herpes zoster and chickenpox has been discussed in medical literature for a number of years.

MENINGITIS

The skin manifestations of meningitis are always to be borne in mind. They are quite variable. Herpes, particularly of the lips, is very commonly found, usually appearing from the fourth to the seventh day. The various forms of hemorrhagic eruptions which are described under the septicemic type of the disease may appear during the first 2 or 3 days. In any acutely ill child, with or without skin manifestations, evidence of bulging or tense fontanel and inability to flex the chin upon the chest should be looked for automatically. If any reasonable doubt exists, spinal puncture should be made. The prognosis of meningitis is much more favorable since the advent of meningococcic serum, sulfa drugs, and penicillin.

POLIOMYELITIS

In the preliminary stage of constitutional manifestations, it is impossible to diagnose an infection with the virus of poliomyelitis or to differentiate it from the constitutional manifestations of general infections. The spinal fluid in this stage is entirely normal. The preparalytic stage of poliomyelitis with evidences of involvement of the central nervous system must be carefully differentiated from a number of other conditions, i.e., epidemic type of encephalitis or encephalitis lethargica, tuberculous meningitis, purulent meningitis, and meningismus. After paralysis develops poliomyelitis must be differentiated from various other diseases in which paralysis occurs; such as postdiphtheritic neuritis and neuritis due to alcohol, arsenic, and lead. Scurvy may be mistaken for poliomyelitis during the epidemic season. Injury to nerves, to bones, and to muscles must be considered in the differential diagnosis. Fracture of the femur has been mistaken for infantile paralysis. Certain disease conditions such as tuberculosis of the spine must be eliminated. Hysteria in young women may also produce deceptive manifestations, but the reflexes are normal. Probably concerning no other disease is there as much hysteria among the general public with just a whisper of an epidemic. Last year a case was seen where various physicians could not convince the mother that her child did not have poliomyelitis. The mother finally had a hysterical attack to prove to herself that she also was infected. However, she steadfastly refused spinal puncture for herself or the child. She enjoyed 6 months of babying the child which was growing away from her all too fast. What it did to the child, time may tell, but the long-time effect can never be accurately measured. Of such things are neurotic personalities built.

COUGHS

In most of the sore throats and in the various irritations of the bronchial tree there are coughs of varying severity. The determination of whether or not these coughs are pertussis is often very difficult, especially in children who have had pertussis serum a varying number of years previously. They may not develop the characteristic whoop. Again some of the common variety of coughs will sound very much like the characteristic whoop and often will cause some vomiting. Frequently this situation may present a very real problem as it may involve whether or not several children are allowed to continue in school.

INFECTIOUS MONONUCLEOSIS

Infectious mononucleosis, also known as glandular fever, is one of the acute diseases which is often misdiagnosed. It is characterized especially by fever, hyperplasia of the lymphatic tissues of the body, and lymphocytosis, including many pathologic lymphocytes in the blood stream. This disease usually occurs in epidemics but sporadic cases do occur and probably many of them are missed. Epidemics occur, apparently as German measles do, about once in 8 or 10 years.

The treatment which seems to clear these cases rapidly is scarlet fever serum (human immune), 20 cc. intravenously and repeated as necessary. Otherwise treatment is as for any acute febrile disease.

SUMMARY

1. An attempt was made to review the important acute diseases seen in pediatric practice.

2. The following diseases were discussed: Acute sore throats, streptococcic infections, diphtheria, scarlet fever, measles, smallpox, chickenpox, meningitis, poliomyelitis, coughs, and infectious mononucleosis.

3111 Detroit St.

Feeding Problems of Childhood*

HELEN C. HAMPTON, D.O.†

Early in our existence we find that two of the great problems of life are how to get enough food to eat and the proper elimination of waste products.

Not long ago milk alone was considered sufficient for the first year of the baby's life. We now know that the young baby needs and can handle many foods other than milk. Manufacturers have carefully prepared a large variety of very excellent baby foods. These foods used under supervision of the physician provide a well-rounded diet early. They are also a great help to the inexperienced, busy, or lazy mother, and their use insures a much higher average of well-fed babies.

Quality of the food as well as the quantity taken is important in the prevention of nutritional deficiencies in the growing child. The food also must be properly prepared and carefully presented.

What are the sources of food requirements and what are the effects on the child?

Carbohydrates and fats are known as the energy foods for the young child. The carbohydrates are the most popular because they taste best. They are, of course, quickly absorbed, providing fuel for the energy so much needed by the active child. The pure natural carbohydrates are honey, molasses, maple syrup, and sugar cane, all of which can be used only as supplements. Cereals, breads, fruits, and root vegetables lend themselves to more general use.

Fats not only give the body energy, but they are beneficial as carriers of vitamins. Natural fat is found in pure form in butter, cream, cheese, eggs, meat, fish, nuts, and oils. Butter is best for use as shortening and seasoning of foods which should be prepared by the ordinary methods of broiling, boiling, and roasting.

Proteins in sufficient amount and in assimilable form are required for the rapid growth and development of the child. The most beneficial proteins are found in milk, cereals, eggs, and vegetables. Our most commonly known proteins, meat and fish, are not necessary to the very young child. During the recent meat shortage it was surprising to find many youngsters doing much better without meat than they had previously when there was plenty. Green vegetables, fruits, egg yolks, and whole wheat products provide sufficient copper and iron to prevent anemia. The soy bean is a wonderful source of protein and is being presented on the market in several usable forms.

Minerals or salts are important in maintaining optimum health and in keeping the proper fluid balance of the body. Sodium, potassium, calcium, magnesium, iron, copper, and iodine salts are important to each other and in the utilization of vitamins. The best way to obtain these minerals is in their natural form from fruit and vegetables.

Vitamins are a definite element in the normal growth and well-being of the body. The constant growth in the knowledge of them widens views and changes ideas as to specific requirements. A diet containing an ample supply of milk, fruits, vegetables, and whole wheat cereals and breads is sufficient to cover the body needs.

Feeding problems may result from physical abnormalities, poor environment, and from poor selection, preparation, and presentation of foods.

The newborn infant is most fortunate when it can be breast-fed by its mother. When normal new babies will not eat, there is usually something mechanically wrong in the actual procedure. The mother and child must be in a position comfortable to both. The mother lying on her side, with that arm tucked under her head and the baby on his side, nestled close to the breast is the usual, acceptable position. If this position does not work, others should be tried until a suitable one is found. Young agile mothers prefer to sit straight up in bed with their knees up, supporting the baby with one knee and one arm. The use of a breast shield is of value, especially when the mother has inverted nipples or when the nipple becomes tender. The nipples should be cleansed thoroughly and there should be no bitter-tasting solution left on them. The quality and quantity of the food must be sufficient for the interested baby.

The tonguetied baby has a most difficult time in sucking whether from breast or bottle. The sooner his tongue is clipped, the better.

Bottle-fed babies respond very nicely when placed on a firm pillow, such as the spring cushion of the davenport or overstuffed chair. The mother sits in a

*Presented at the Pediatrics Teaching Session, Fifty-First Annual Convention of the American Osteopathic Association, Chicago, July 25, 1947.

†Dr. Hampton died April 16, 1948.

chair near a table with the pillow resting on her lap and the edge of the table. The baby lies on the pillow facing the mother and with his feet in her lap. Gravity takes the milk down. The air bubbles rise to the top and are "burped" more readily when the baby is lifted over the shoulder. The mother is comfortable and the baby is relaxed.

Nipples are very important. They must be pliable enough to be sucked. The holes must be large enough so that when the baby is sucking, milk shows in the corners of his mouth. The feeding should be taken in 20 minutes. The milk should be just body temperature.

The feeding problem with some babies is really a regurgitation problem. They will take anything, but in the course of time some or all of it comes up. After eliminating the possibility of pyloric stenosis, the food should be considered. The quality, the quantity, and the preparation are of utmost importance. The quality and quantity are easily altered. Faults in preparation are often harder to trace. Everything used must be sterile. Formula proportions must be correct for the age and weight of the infant. Measurements must be accurate. The temperature of the boiled water must be high enough to dissolve the sugar in the formula, but not high enough to sour the milk. Correcting the temperature of the water very often provides the answer to feeding and regurgitation problems.

Minor regurgitation and so-called colic will often respond to osteopathic manipulation of the upper thoracic and rib area, and correction of the cervical and cranial lesions. These areas are often severely strained in the birth canal and are frequently found jammed together or overlapping.

The starting of solid foods may become a feeding problem. The mother must be cooperative, giving the baby a feeling of perfect confidence in her and in anything she offers him. She must be careful not to let the baby know that she or anyone else may not care for the food being served. The temperature of the food should be that of the body. Small amounts should be fed from the spoon and be emptied over the tongue in the back of the mouth. The first solid foods should be served almost as thin as milk, and gradually thickened as the baby can handle them. The first feeding of any new food should be ¼ teaspoon and the amount gradually increased each subsequent feeding until the baby's capacity is reached. This method will prevent regurgitation, intestinal gas, bowel disorders, and skin rashes.

If a baby gags on any food when it is first offered under proper conditions, that food should be omitted from his diet for a month or two, and then tried again, at which time he probably can handle it.

Milk should form the largest part of the baby's diet during the first year. Solid foods are definitely extra.

At 3 months many normal babies begin to show a tendency toward a hard stool and constipation. This is the time to start solid foods in the form of vegetables, first using the sweet mild ones, such as strained carrots or peas, and gradually working into all the rest. Cereal is started at 4 months using the single grain type, such as 5 minute farina or cream of wheat. Later the prepared baby cereals may be used. Fruits are added at 5 months. A complete meal can now be instituted and served in the middle of the day, somewhere between 11:30 a.m. and 1:30 p.m., depending on the baby's schedule. Quantities of allowed foods are increased as fast as the baby can take them. Raw scraped apple and banana are added at 6 months. At 7 months the baby is hungry late in the afternoon, so any one of the baby soups can be started. At 8 months the soup is not quite enough to satisfy so a cup of plain junket is served at the same time as the soup. Milk in the morning is not enough by the ninth month. The cereal is then served for breakfast and baked potato put in its place at the mid-day meal. Eggs are started at the same time. The raw yolk may be added to the cereal, starting with one drop and gradually increasing the amount as fast as the baby can handle it. The white is not used until all the raw yolk is taken. When the white is given, it should be whipped, just a little sugar or salt added, and one teaspoon given daily, gradually increasing the amount until the whole egg is used. The whole egg may then be beaten and added to the milk with a very little sugar, as an eggnog. It may take 3 months for the baby to manage a whole egg. If he is not rushed now, he will develop a tolerance for eggs.

By now the baby should be off the breast or formula entirely. Instead he will take about a quart of cow's milk daily from his bottle, and in his foods. One teaspoon of gelatin crystals, three times a week may now be added to his soup or fruit before heating. Crisp broiled bacon three times a week may be served to start the mid-day meal. At 10 months custards, boiled, baked, or canned, may be served. Cottage cheese is added at 11 months. Vanilla ice cream, if a good make, is allowed, but must be taken in small sips off the spoon and of course used only as a dessert, with the meal.

All bottle sucking must stop at 12 months as it moulds the shape of the hard palate and upper and lower jaws at just the time they are most pliable and are developing teeth. The baby will help himself eat now. The mother's feeding problem the second year is to get enough food ready and help guide it to his mouth. The elimination problem will be one of training.

This second year the child gradually develops desires for a few things from the family table. Some things may be given if one considers what the child can assimilate to his best advantage. At first allow bones which are practically clean. A drum-stick or a steak or lamb chop bone will keep the baby happy a long time and help him cut his teeth. The outside crust of bread or a dry piece of toast are excellent. Mashed potato; any vegetable which will mash soft, such as lima beans, carrots, peas, broccoli, plain rice or spaghetti; mild cheeses; broiled, boiled, or roasted meats or fish in very small amounts; custards and milk puddings—all become more and more usable as the child advances in age. Junior foods are for the child who has some teeth to chew with. Their use depends entirely upon the development of the mouth.

The child has now been introduced to the basic food for years to come. The problems which arise are those resulting from parental management or actual physical ills.

Osteopathically we find that children from 2 to 12 years often have posterior bowing of the lower thoracic and upper lumbar area. Its correction improves their appetites almost immediately.

Parents must remember that the 2, 3, and 4-year old child does not usually require the large amounts of foods he did earlier. If he fills up on a glass of

milk he has no room for solid foods, and now the solid foods are the more important to him, but only in the quantities required for normal growth and development.

Children who crave sweets are usually satisfied by concentrated sweets, such as several pieces of good candy immediately following a well-balanced meal. In my opinion no child should be allowed sweets or foods of any kind between meals. Soft drinks, gum, cookies, "life-savers," etc. may be used judiciously with or immediately following a full meal, but never allowed to replace any of the basic foods.

Many feeding problems can be traced directly to the poor preparation of food, unappetizing serving, irregular hours, too much radio or other noisy confusion, or an atmosphere of hurrying. The child who has out-of-door play, a good vitamin supplement, and plenty of sleep usually does not develop feeding problems.

Worms definitely interfere with the whole digestive tract. At first the child seems too hungry. Later he loses his appetite and the signs of worms are very pronounced, i.e., itching at the rectum, grinding of the teeth, crying out in the night, coughing, and eventually choking and vomiting up a quantity of the parasites. The very young baby may have worms. I have seen them at 3 months of age. There are several preparations on the market which may be used safely to eliminate them. Hexylresorcinol crystoids may be used.

Proper elimination is so closely related to proper eating that in all feeding problems the digestive history and habits must be considered. More fruits, vegetables, and water, and less starch and protein will usually produce a good bowel movement daily if the habit of a regular time and opportunity is observed. Immediately following any one or each of the three meals is the best time for babies and children to have their bowel habit established.

In cases of diarrhea, the bowel movement should be followed with an enema of 1 to 4 cups of water at body temperature, the amount depending on the age of the patient. Foods should be used which are constipating, such as boiled milk, cheese, meat, and starches. All vegetables and fruit should be omitted.

Osteopathically one must be sure the lower thoracics have their normal range of motion; if they do not, the patient should be treated regularly and carefully.

In cases of constipation, the osteopathic correction of the lower back and sacroiliac, as well as abdominal treatment, gives relief. The foods causing increased peristalsis are to be used. Fruits, vegetables, popcorn, rough coarse cereals, molasses, honey, and maple syrup are very useful and usually well taken. An enema of warm water should be given to loosen and empty the lower bowel once a day for 3 or 4 days while giving the diet a chance to take effect. With the return of normal elimination, the feeding problem disappears.

Sometimes a child enjoys being a problem. Parents and their friends talk them over, which, of course, keeps the child in the limelight. At meal time special concessions are made to him. A trip to the doctor's office is fun and breaks the monotony of the daily routine. Grandparents worry about him and buy him special gifts, some as a bribe to eat his food and some because he is a "poor little thing with such a delicate stomach!" He soon learns that he has the "whip hand" and he uses it to his advantage. All these things he discovers early in life if his parents can't make up their minds as to whether they or he are going to be boss.

The child who seems to be allergic to many foods is a problem. He develops hives or a skin rash, or eczema, or a condition resembling hay fever. This is a real problem and takes a lot of patience and cooperation to solve.

The dermatologists have decided that a high percentage of the eczemas of early childhood will right themselves as the child's body develops. It is best not to deprive the child of the many foods which are of real value for physical growth and development. In my own experience I have found that such cases respond very well to general osteopathic manipulative therapy with special attention to the low-back area. The more or less frequent use of plain water enemas and use of such foods as will give bulk and roughage enough to the stool so that the bowels move daily help the problem. I advise the elimination of only the one food which seemed to be the exciting factor of the original symptoms. The most common ones are chocolate, strawberries, oranges, eggs, and bran. Any food taken in too large a quantity or too often may irritate these children.

The child who loves to eat and eats anything at any time, gets fatter and fatter and causes his family much worry. I want to eliminate tapeworm, constipation, glandular conditions, and the family heritage as causes before I feel free to say that these children are going through a stage in their development which may last only a short time or carry on through the first or second year of high school before they begin to slim down to the proper weight for their height. If the parents will encourage the eating of salads, fruits, and vegetables with a minimum amount of starches, carbohydrates, and allow lean meats only once a day, 5 days a week, most of these children will be satisfied, cease gaining weight, and have more energy and vitality. If excessive appetite with resulting obesity continues, it may indicate a prediabetic condition or hypothyroidism. Tests should be made to determine the presence or absence of these conditions.

In cases where the appetite seems to be overwhelming, institute the things which interfere with the appetite of the child who will not eat. Allow half of the dessert 15 minutes or ½ hour before the meal is served. Allow candy or sweets or soft drinks to "spoil the appetite." Explain to the child that his body can use only so much fuel in the form of food and all extra makes those extra pounds he wishes to lose.

CONCLUSIONS

1. It is important to know the body requirements of the normal individual and, with these in mind, solve the feeding problem, considering the food, preparation, presentation, and environment. The causes of one disorder may be the solution of another.

2. Osteopathic manipulative correction of the posteriorly bowed back results in a definite improvement of the function of the intestinal tract from appetite to bowel movement and helps solve the problem of getting enough to eat and properly getting rid of it.

Journal A.O.A.
Vol. 47, No. 9

Behavior Aspects of Feeding*

ARNOLD MELNICK, A.B., D.O.
Philadelphia

Feeding in childhood has too long had a pure and simple object—nutrition. Pediatricians and psychiatrists have come to view eating as an educational process. It is part of that huge panorama of events in the life of the child that contributes toward its maturation and serves as part of its development. Today it is more correct, and understandably so, to consider feeding as a process of socialization in which satisfactory adjustment carries with it satisfactory nutrition.

FEEDING REFLEXES

Certain behavior patterns which begin in the uterus, and some of which stay with the child throughout life, must be considered as the starting point. These reactions, most of which are reflex in nature, speed the newborn toward happy feeding.

The rooting reflex is initiated when the cheek of the infant is touched or stroked or when he smells milk. His head then turns in the direction of the cheek stimulated in a search for the nipple, and herein lies one of the earliest problems of nursing. Anxious mothers, trying to approximate nipple and mouth, turn the baby's head by pressing on his opposite cheek and pushing it toward the breast. This obviously causes the newborn to turn in that direction and away from the breast and worries the mother.

When the nipple has entered the mouth of the baby, the second behavior complex takes over. According to Ribble[1] the sucking reflex serves the purposes of intake of nutrition and increase of circulation to the head and face of the child, contributing to the development of these areas. However, the psychological import of sucking is tremendous. To the child himself, this is the chief source of pleasure throughout infancy. Careful observers report that suckling children show greater strength of other vital functions than those whose nutrition is supplied without the use of this reflex. Sucking should be allowed until the child is ready to stop, so that frustration does not replace developing security.

Swallowing appears about the fourteenth week of fetal life, and while it appears to be a simple process, in truth it is complicated. The ability to get food past the trachea into the esophagus without mishap is a complex one to develop.

Aldrich[2] describes another reflex which protects the child and, incidentally, gives mothers many worrisome moments. When any object is placed just inside the baby's lips, the tongue automatically pushes forward to reject it. Attempts at feeding of cod-liver oil and juices are met with resistance if not placed back far enough in the mouth or at the side of the mouth, well inside.

At the time the teeth should begin to erupt, the lower jaw has developed to larger size and the child begins to show chewing activity, whether teeth are present or not. This is the "zwieback" stage when the child should be encouraged to chew on something like coarse vegetables, toast, etc., to accommodate this activity.

*Presented before the meeting of Region I, American College of Osteopathic Pediatricians, New York City, April 2, 1948.

These then are the psychophysical developments in the eating behavior of the youngster. Accessory to these, however, are certain other aspects of the feeding situation. It is in this sphere that most difficulties occur, and it is to these that we now turn our attention.

SECURITY

Security is closely allied with the feeding process, and in the first year of life lies the opportunity for the parent, under the guidance of a wise physician, to establish that security. Newborn infants are unaware of anything but "self," not even having arrived at the stage of recognizing "non-self." In this condition, they are oblivious to everything except their own discomfort. When the stomach is empty, hunger contractions start and the child is uncomfortable, remaining that way until it is fed and the contractions stop. Relaxation of tension and satisfaction follow. A normal pattern of hunger contractions—discomfort—feeding—satisfaction builds in the child a feeling of security. The old idea that teaching the child hardship early in life by depriving him of things could toughen him for facing reality is now known to be false. It only leads to the establishment of a neurotic personality, which reacts with frustration to each situation it meets. On the other hand, the child trained in security throughout the first year by having its needs met realizes that life is a nice place, that things can be comfortable, and when an unpleasant situation arises, he can tolerate it better.

Hand in hand with the feeding security is the feeling of well-being which accompanies the proper handling of the feeding hour. In infants, this means being held close to the mother during feeding and cuddled in her arms, whether bottle or breast fed. This rapport aids greatly in the establishment of security. It has been found that in children deprived of this, although nourished properly, insecurity develops. To be dispelled at this point is the old conception, held by many pediatricians, and even more obstetricians, that breast feeding per se offers more security to the child than bottle feeding. In a study among New York college students,[3] it was found that the ones with the highest scores in a security inventory test were those who had never been breast fed or who were breast fed for over a year. In other words, insecurity developed because of the change from breast to bottle and the distressing ramifications which so often occur.

APPETITE

Appetite is the axle on which turns the wheel of feeding progress. And around this center also revolve so many of the child-parent conflicts of our modern day. Though pointed out many times, it still must be emphasized that all children who are not ill can select their own proper diets without adult help and without the imposition of adult standards of appetite. Clara Davis[4] in her epochal experiment showed that self-selection of diet led to better appetite and better nutrition than the newer regime of scientific schedules. A number of newly weaned infants from 9 to 15 months of age were chosen. Twenty items of

unseasoned food, each natural and unprocessed, were presented in three parts, one-third at each meal. By giving the children no supervision, only help, they were able to choose their own diets. Exact amounts were measured before and after meals and values of the food ingested by each child were calculated. These showed that the diets, in spite of waves and "binges" at certain meals or certain times, were well balanced over a 6-month period. The important facts were that appetite was uniformly good, there was never abdominal pain or gastric discomfort, and constipation was unheard of.

What makes natural appetite so scientific a balancer of ingested food? Much speculation and no result has come out of this question. This much is known: it happens and that is important. The now popular self-demand feeding of infants is a response to this ability of natural appetite to regulate the child. In the long run, the child's appetite will settle into a regular schedule.

The conclusions to be drawn then are these: Children's appetites will do their own regulating, so should not be interfered with. There should be no coaxing, cajoling, pleading, or forcing of food at mealtimes. If mealtime is happy time and an enjoyable situation in which the child can eat what he wants, there will be no feeding problems.

The introduction of new foods provokes much tension and worry in the average home. As stated before, this should be an educational process, not a nutritional one. When the physician says, "Start him on cereal," it does not mean that the child must either begin immediately taking special amounts or he will die of malnutrition. To simplify this ordeal, it should be made clear that only one variable factor should be allowed in the introduction of new food. In starting cereal, a child who up to this point has only been given milk or fruit juice from a bottle is suddenly given cereal from a spoon. It is better to teach the feel of the spoon by use of the milk or juice. Once he is accustomed to this, some thinned-out cereal can be tried. Foods have different consistencies and varying tastes. They should be introduced separately and the child given sufficient time to get used to each before changing to another. Adhering to the self-selection principles, if a child shows an obvious distaste for any particular food, it should be dropped for a period of time. He will still get sufficient food value from other items and the disliked one may be tried again later. Children's tastes, like that of adults, will vary from time to time, and his natural desires should be observed in presenting new foods.

In the first year of life, the child should begin to develop the activity of self-feeding. Such activity teaches him self-reliance and self-assurance, adding to his sense of personal security. This development involves learning the use of the spoon and cup.

One aspect of spoon feeding has already been mentioned, the first presentation of the spoon. It is also a wise policy to allow the child to play with the spoon before feeding him with it. Also, let the child attempt to use the spoon to self-feed when he is ready. Surely more will spill on him and the floor than will go into his mouth, but only in this way can he learn.

With cup feeding, as with the use of the spoon, it is the gradual conditioning of the child that is important. When first introduced it should be the only new item, that is, familiar fruit juice or formula should be in it. The quantity used in the cup at first meeting should be very small, one or two sips, followed by the bottle of the same substance. This should be gradually increased until the child can handle large amounts, and the entire bottle feeding is replaced. At a developmental level of about 4 months the child has learned to grasp the bottle in both hands, and soon starts to feed himself with the bottle. Adaptation of this two-hand activity to the cup is made and the child with help learns to handle the cup by about 8 months. Again here, the problem of messiness arises but is secondary to the long range value of the process.

PROBLEMS

Some of the feeding problems which arise are developmental in origin and have already been touched upon. Three major eating difficulties are to be considered: Pica, anorexia, and obesity.

Pica, or perverted appetite, occurs often throughout childhood. From 4 to 10 months of age the normal reaction of putting the hand to the mouth exists, and in some children this developmental stage may persist longer. Therefore, when hungry, the child naturally puts the nearest object to his mouth. Continuance may mirror improper habit training and failure of proper parental supervision. It may be a sign of serious mental retardation. Treatment of this psychological problem is closer behavior supervision, prevention of ingestion of abnormal items, and stimulation of the desire for normal objects.

The pediatric problem that faces the practitioner most often is anorexia. Tonics and hematinics are given in wholesale quantities. But most cases of "he won't eat" are purely psychological. A number of causes may be described:

1. The mother's idea of what is sufficient for her child to eat. She usually expects more to be eaten than is optimum or necessary.

2. Parents' refusal to respect the natural period of decline of appetite which occurs from 1 to 2 years of age, and wanting the child to eat the same relative quantities he did when a baby. In the first year, an average baby gains 14 pounds, and then 5 pounds each subsequent year. Naturally, he needs less food after the first 12 months, in fact, about one-third as much.

3. Forcing of food on child as a compensation for the mother's guilt feelings toward the child. These may have arisen because she did not want the baby in the first place, tried to get rid of it during gestation, was not satisfied with the child's appearance or sex when it was born, or any one of a number of other reasons.

4. A similar problem occurs in overaffectionate parents. The child automatically is overprotected in such a household and is given too much to eat, at which he revolts.

5. Lack of observation of the newer knowledge of developmental progress and ability at self-selection and self-regulation leads to inflexible, fixed schedules, both as to time and amount. A similar situation arises in older children when parents fail to realize that the appetite of a child may vary from meal to meal and day to day, and that children differ in their appetites.

6. Reaction to an unpleasant mealtime situation. Meals should be served in a pleasant orderly atmosphere. Bickering, quarreling, and fighting, regardless of which members of the family are involved, will be upsetting to the child. Repeat performances lead

to anorexia. Anorexia nervosa is the term used to describe lack of appetite due to emotional disturbances. Perhaps it could better be called anorexia nervosa contagiosa to indicate its communicative nature, a centripetal thing—emotional tensions in the home surrounding the child and finally giving him anorexia.

7. Revolt at frequent displays of overbearing authority.

8. An attempt to secure attention. The child often feels that this is the only means of getting the observation and love he needs. However, too many doctors place all feeding problems in this category without first investigating carefully.

9. Failure to recognize physiological diminution of appetite following illness.

Treatment of anorexia is, of course, removal of the cause. Proper rapport must be re-established between parent and child by getting the parent to understand the developmental processes involved. Nutrition must be de-emphasized during treatment stages. Bribing and punishing must cease, and the ingestion of food must no longer be the end sought. Small helpings must be offered and the child's vagaries of appetite respected. The parents must be reassured that the child is all right, that he will not die if they stop forcing food, and that he should be given enough loving that he feels secure without his tangential demands for attention.

Obesity is also a frequent complaint in pediatric practice and has as its source many psychological problems. Too often a blanket diagnosis of endocrine dysfunction is made and the case closed. Children may overeat because of boredom and monotony. Particularly where the family is overprotective and the child gets little opportunity for healthy play with other children, eating is the only pleasant answer to the monotony. Anxiety, often due to lack of security, real or imagined, will cause the child to nibble constantly. This is a form of persistent nonadjustive behavior, maintenance of a pleasurable situation, which although it does not solve any problem, obviates the necessity of facing it. Frustrations serve the god of obesity in the same manner, for eating becomes a substitute gratification. The dynamic mechanism of arrest at the oral stage of development will also cause overeating.

Prevention of eating difficulties is a field wherein the physician can do much for children. He should see that parents are made aware of the developmental steps in child growth before the baby is born. Good books on the subject, such as those by the Aldrichs,[2,5] should be recommended. It is suggested also that some behavior schedule of feeding be set up, varying with the particular doctor's general feeding schedule. A suggested schedule follows:

At 4 months start feeding juice or formula from a spoon, starting with 1 spoonful at a time and gradually increasing until he is accustomed to it. Follow spoon trials with bottle.

At 5 months start cereal, very dilute at first, gradually working up to average consistency.

At 6 months start adding vegetables, one at a time, giving child time to become accustomed to each. Introduce each new one in a small quantity at the beginning of a meal when the child is hungry, then follow with a liked food. (Other foods to be added in a similar manner.)

At 6 months place glass in front of baby and allow him to play with it.

At 7 months put small sips of formula in cup and allow baby to take, holding the cup in his hands with help. Gradually increase until he enjoys the use of the cup.

At 8 months start warning the parents that the child's appetite may start to fall off at any time.

Mealtime should be made a happy hour, with no excitement or family fights. The child should be called for his meal 10 to 15 minutes in advance so he can calm down from his play. Family influence and imitation play an important part. Proper eating habits of the parents serve as a constructive influence on the child, and the older members of the family should maintain a serene and unconcerned attitude toward the child's eating. Needless to say, attractive service, variety, and tempting food do much to prevent eating problems.

5135 Whitaker Ave.

REFERENCES

1. Ribble, M. A.: The rights of infants; early psychological needs and their satisfaction. Columbia University Press, New York, 1943, pp. 22-34.

2. Aldrich, C. A., and Aldrich, M. M.: Feeding our old fashioned children. Macmillan Co., New York, 1941.

3. Maslow, A. H., and Szilagyi-Kessler, I.: Security and breast-feeding. J. Abnorm. & Social Psychol. 41:83-35, Jan. 1946.

4. Davis, C. M.: Self selection of diet by newly weaned infants; experimental study. Am. J. Dis. Child. 36:651-679, June, 1928.

5. Aldrich, C. A., and Aldrich, M. M.: Babies are human beings. Macmillan Company, New York, 1938.

ADDITIONAL REFERENCES

Bakwin, R. M.: Feeding difficulties in early childhood. M. Clin. North America. 31:688-693, May, 1947.

Freed, S. C.: Psychic factors in the development and treatment of obesity. J. Am. M. A. 133:369-373, Feb. 8, 1947.

Kanner, L.: Child psychiatry. Charles C. Thomas, Springfield, Ill., 1946, pp. 340-350.

Shirley, H. F.: Psychiatry for the pediatrician. Commonwealth Fund, New York, 1948, pp. 77-92.

COMMON BEHAVIOR DISTURBANCES IN THE FIRST TWO YEARS OF LIFE

A majority of babies at about the age of 1 year show the same exaggerated arbitrariness in appetite that they show in other matters. Probably, the smaller rate of gain in weight and the discomfort of molar teething play a part in the sudden decreases in appetite that occur. But, over and above these, he shows an irritating choosiness. He refuses to touch the vegetable which yesterday was his favorite. He may turn against all his vegetables for weeks, and even months, at a time, or against cereal and his milk. The conscientious mother, sure of the importance of the balanced diet, is tempted to become bossy and insistent. The child's temporary dislikes of certain foods are turned into permanent hates, which often last for years. Certainly, more feeding problems begin during the second year than during any other period. The irritation of the frustrated mother and the balkiness of the child easily spread into other aspects of their relationship. —Benjamin Spock, M.D., *Journal of the American Medical Association*, March 20, 1948.

Pediatrics: Art of Practice*

DOROTHY CONNET, D.O.
Kansas City, Mo.

Office records, hospital records, clinical records —all are of the utmost importance. The habit of keeping the complete records should be established early in the training of the young doctor. As soon as he begins his clinical work and while he is yet a student, he should be taught to delve thoroughly into the family history of each patient to learn if there is any hereditary tendency toward tuberculosis, nervous disease, heart disease, rheumatic disease, allergic conditions, diabetes, malignancy, kidney disease, or mental disorders. In obtaining this information the doctor should begin by investigating the health of the patient's parents and should continue by checking the health of each individual on both the maternal and the paternal side of the family as far back as possible. He should also learn if the patient has brothers and sisters and the age and state of health of each. If any members of the family have died, he should ascertain the cause of death. The health of the child's mother during pregnancy is important as are the circumstances surrounding the birth of the child. Was the mother in labor long? Or was the birth precipitous? Was the head the presenting part? Could the child have sustained a birth injury? Was it apparently normal when examined immediately after birth? What type of home environment does the child have? All this information is important because it supplies the child's background.

The past history of the child merits careful consideration. This properly begins at birth and the alert doctor will inquire whether the child was born at full term or prematurely. Was the birth normal or instrumental? The condition of the child at birth should be a part of the history. Was he vigorous or weak? Was there dyspnea, cyanosis, convulsions, or hemorrhage? Was any skin disorder present? The physician should learn and record the child's birth weight and height and determine whether he has gained normally in weight and height since birth. He should inquire into the method used in feeding the child. Was it breast or artificially fed? If the latter, what type of formula was used? How was it tolerated? One should learn if the older child feeds himself or if he requires help. Is his appetite good or poor? At what age did the child's teeth erupt? When did he sit alone? At what age did he begin to walk and talk? When did the fontanels close? Something should be learned about a child's muscular and mental development by determining at what age he first held his head up and when he first sat alone. When did he begin to crawl and at what age did he walk? When did he begin to notice people and recognize his mother? At what age did he appear to understand things said to him?

Previous illness of the patient should be a part of any case record. Each acute illness with the date and details of its occurrence is important. Doctors should learn whether a child is subject to disorders of some particular system, for example, the respiratory system.

Inquiry into the immunization record of the child must not be neglected. It is also important to know if the child has been recently exposed to some acute infectious disease. Information as to the child's habits, behavior, training, and daily routine is often helpful.

With regard to the illness which has brought the small patient to your office or you to his bedside, inquiry must be made as to whether its onset was sudden or insidious; the date of the onset; and the accompanying symptoms, such as nausea, vomiting, constipation, diarrhea, convulsions, restlessness, delirium, drowsiness, coma, fever, dyspnea, sweating, cough, nasal discharge, frequency and amount of urine, and evidence of pain.

Information gained by a physical examination is obtained by four methods, inspection, palpation, auscultation and percussion:

By inspection we observe whether or not a child is well nourished, the color of the skin, eyes, and hair, the posture, the facial expression, evidence of skeletal deformities, condition of the nervous system, character of the respiration, the degree of prostration, nasal discharge, and condition of the ears, eyes, mouth, and throat.

Palpation gives us information as to the pulse rate and volume, elevation of temperature, enlargement of lymph nodes, joint tenderness and enlargement, tenderness, rigidity or masses in the abdomen, disturbances in the relationship of the skeletal structure, muscular contraction, thrills, tactile fremitus, and the condition of the skin.

The chief benefit derived from the use of auscultation is that we can listen to and count the heart rate and detect heart murmurs. The breath and voice sounds may be evaluated. We may examine the abdomen for borborygmus or for complete absence of sound.

Percussion is of value in outlining thoracic and abdominal organs, in finding areas of consolidation in the lungs, in eliciting the tympanitic note due to distention, and in detecting the presence of ascites.

For the conduction of a satisfactory physical examination the patient's clothing should be entirely removed and the physician's hands and instruments should be warm. An infant should be draped with a sheet or cotton blanket. A gown made along the lines of the hospital gown may be used for the older child. We must never forget that children are people and we must respect each child's sense of modesty. A wise method of procedure is to examine the patient under cover whenever possible. The doctor will gain the confidence of the child by doing the things that do not hurt first. Then when it is necessary to hurt it is wise, if the child is old enough to understand, to tell him that you are sorry to have to hurt him but that you know he will be brave about it and it will be over in a few minutes. Some children may be uncooperative and will require restraint, which should be used when necessary.

Some system of examination should be followed. One may begin by examining the skin. The alert doctor will look first for eruptions. If any are found the child should be isolated until it is determined whether or not the condition is contagious. Continu-

*Presented at the Pediatrics Teaching Session, Fifty-First Annual Convention of the American Osteopathic Association, Chicago, July 24, 1947.

ing the skin examination, one should look for cyanosis, pallor, mottling, excessive perspiration, scars, birthmarks, amount of subcutaneous fat, dryness, or oiliness.

Next one should examine the head, noting its size, shape, the condition of the fontanels. If open, are they small, large, bulging, or depressed? Are there craniotabes or cranial bosses, enlarged lymph nodes, scalp ringworm, or nits?

The neck needs to be examined for rigidity, enlarged nodes, malformations, and cervical lesions.

Probably the next item to receive attention should be the ears. Externally they should be examined for tenderness in the mastoid area. Is there an aural discharge? Are there malformations? Internally the condition of the tympanic membrane and the ear canal should be observed. Is there any evidence of deafness?

The eyes should be next. They should be checked for blepharitis, bulbar or palpebral inflammation, ptosis, strabismus, and nystagmus. The condition of the cornea and the size of the pupils should be noted. Is there any inequality?

Examination of the nose is made for evidence of obstruction and discharge. If either is present, its character is important and should be noted.

The chest examination should include determination of the amount of expansion, symmetry, evidence of rickets, as Harrison's groove, beading of the ribs, or other bony elevations or depressions.

In making skeletal examination, the posture should be considered. Are there round shoulders or winged scapulae? Is there spinal curvature such as abnormal scoliosis, lordosis, or kyphosis? Is there disturbance of the normal relation of the vertebrae? Are there enlarged joints or malformations?

An examination of the heart should locate the apex impulse and determine the force and character of the heart sounds, the rate and rhythm. Is there cardiac enlargement? Are any murmurs heard? If so, what is the type and location?

Lung examination should determine the type and rate of respiration and character of the breath sounds. Are rales present?

In examining the abdomen the doctor must look first at the conformation. Is it flat, distended, or scaphoid? Are there any hernias? Is there tenderness or rigidity or are there masses? Or fluids? Are any viscera, such as liver, kidney or spleen, palpable?

In an examination of the male genitals, the doctor must look for phimosis, preputial adhesions, hernia, and hydrocele. Has circumcision been done? Have both testicles descended? Is there inguinal adenitis? Are there malformations?

In the female, we may find hooded clitoris, vaginal discharge, inguinal adenitis, hernia, or malformations.

The examination of the mouth and throat should be deferred until the end of the procedure because many children are uncooperative and resentful. During this examination there should be noted the number and condition of the teeth; the condition of the gums, the tongue, and the buccal and pharyngeal mucosa; the size and character of the tonsils; and the presence of congenital malformations, if any.

In summarization, the essential findings should be listed and a provisional diagnosis made.

Routine laboratory examinations should embrace complete blood count, urinalysis, and a tuberculin test. Other tests should be done when indicated by the findings. Any record to be complete should contain information as to the type of office treatment, house calls, hospitalization, type of medication, if any, the progress of the case, the condition of the patient at the time of dismissal, and the final diagnosis.

There are many varieties of record sheets, some of which provide inadequate space in which to write findings at examination. The ideal record sheet should contain (and so few do) adequate space for charting all information gained, particularly that which concerns family history, infancy and preschool record, and the present illness. A record sheet should provide space for the month to month charting of weight and height gain; measurements of head, chest, and abdomen; rectal temperature, and the monthly change of formula for the artificially fed infant. Many records are short of space for noting progress and the type of treatment. In the ideal record sheet these deficiencies should not occur.

Complete, accurate records are important because:

The family history supplies the potential health background for the child.

A history of the child's past illnesses is helpful in ruling out certain conditions as possibilities in the present illness. It also indicates the child's susceptibility to some chronic diseases.

Careful inquiry about and thorough investigation of anything that might have a bearing on the child's present condition will gain the confidence and respect of the family for the doctor. It will also aid in the establishment of a correct diagnosis and build a basis for effective service.

The specialist, or, for that matter, any doctor called in consultation, knows that an adequate case record is vital to an effective consultation because he can, in a few minutes, gain information that might otherwise require a long period to accumulate.

The careful history and case record is a means of self-development for the physician because the more records he compiles the more discerning he becomes, which is, of course, protection against the ever-present threat of human error.

Legal action may be brought against any physician by the family of a patient whom he has been unable to cure or one who has died. If there are accurate, properly dated records to prove that everything that was humanly possible was done for the patient, they are an invaluable aid in the protection of the physician's interests.

There have been many times when doctors have felt as though their hands were tied because some special aid to better care and diagnosis was refused for the patient. The alert doctor will not neglect to make note of these facts on the case record, and should, whenever possible, obtain a release signed by the member of the patient's family who is responsible.

Complete and accurate case records should be maintained for the physician's welfare and that of his patients.

Jewell Bldg., 1103 East Armour Blvd.

Pediatrics Supplement
Vol. 1, No. 1, May, 1948

Review of the Rh Factor*

NELSON D. KING, D.O.

Boston

A discussion of the management of an infant with Rh incompatibility requires a thorough understanding of the Rh problem. It is necessary to give a basic review of the development of knowledge regarding the Rh factor. It is also necessary to give somewhat in detail the possibilities of pathology in the infant with our present-day knowledge of the factor. It is equally necessary to outline the laboratory procedures that are available to give the infant the best care that we know how. The treatment and management of the affected infant is still somewhat contradictory, and these views will be discussed.

In order to understand the Rh problem, it is best to review first what is known. We are all familiar with the blood types known as AB, A, B, and O. These groups are determined by two factors or agglutinogens—the so-called A and B agglutinogens. Therefore, either the presence or absence of these factors determine the blood group. Both being present, the blood is AB; both absent, the blood is O. These agglutinogens are in the cells while in the serum of the same patients there are agglutinins. The agglutinins are specific for the agglutinogens, and will clump the cells. Group A blood contains anti-B agglutinins which would agglutinate B cells. The serum of O contains both agglutinins. There are then certain principles involved: 1. The cells must contain a factor or agglutinogen. 2. The serum causing agglutination must contain agglutinins which are specific for certain agglutinogens. In the development of hematological research other agglutinogens or factors of the red blood cells were discovered. These were named the M, N and P agglutinogens. These appeared to be of little significance because corresponding agglutinins were found only in extremely rare circumstances. Conditions necessary for agglutination of the M, N and P factors, therefore, almost never occur. These factors are inherited according to the Mendelian law, and knowledge regarding them has important applications in cases of disputed parentage.

In 1941 Landsteiner and Wiener[1] reported another factor or agglutinogen, and called it the Rh factor, because it was found in the cells of the Rhesus monkey family. At this time the Rh was placed in the categories of the M, N and P factors because agglutinins were not found in the patient's serum. Therefore, conditions necessary for hemagglutination did not exist. However, Unger and Wiener,[2] in the years between 1941 and 1945, reported hemolytic reactions in the patients whose blood contained Rh agglutinins. At this time it was concluded that repeated transfusions of Rh positive blood or blood containing the Rh factor, given to a patient with Rh negative blood, caused the formation of anti-Rh agglutinins, and agglutination resulted. Therefore, a similar situation of incompatibility with that of the A-B-O group was observed, except that with the Rh, active stimulation must be necessary to produce the anti-factor or agglutinin while the agglutinins of the A-B-O groups pre-exist.

In 1941 Levine and Burnham[3] first described the Rh factor in relation to erythroblastosis fetalis. It was noticed that in about one of approximately twenty-five pregnancies in which the mother is Rh-negative, and the father Rh-positive, and the fetus inherits this factor from the father, sensitization of the mother results. This mechanism is dependent upon a series of physiological accidents. There must first be a placental condition existing wherein the Rh factor passes from the fetal circulation through the placenta into the maternal circulation. Only 0.13 cc. of Rh-positive fetal blood is needed to sensitize. This factor or agglutinogen sensitizes the mother and produces Rh antibodies, the mechanism being the same as in transfusions. If, then, these antibodies pass back through the placenta into the fetal circulation, hemolysis or agglutination may follow.

Eighty-five per cent of the population is Rh-positive; therefore, approximately 15 per cent is considered to be Rh-negative. This figure has stood up well for the white population. All Rh-positive persons, both male and female, have been subdivided into homozygous and heterozygous individuals, according to their heritage of Rh factors. Forty-one per cent of the population has been found to be homozygous, that is, RhRh; 46 per cent of the general population is heterozygous, or Rhrh, leaving approximately 13 to 15 per cent as Rh negative, or rhrh. There are the following types of Rh-positive blood: Rh_0—85 per cent; Rh_1—10 per cent; Rh_2—2 per cent; Hr—2 per cent.

Considering the A-B-O groups and the sub-types M, N and P, there are ten blood groupings to be considered.

The recent work of Rh antibodies has revealed the possibilities of three conditions.

1. Univalent or blockers occurring in 67 per cent of cases where Rh antibodies are found. This type of antibody causes hemolysis of the red cells and can be found only by the conglutination tests which necessitate the use of albumen or some protein to release the blockers from the red cells so that they may be measured.

2. The blood contains all bivalent antibodies or agglutinins. This occurs in 25 per cent of cases. This agglutinin is free in the blood and manifests itself by showing agglutination or clumping of the red cells when Rh-positive blood is added.

3. The combined type, wherein both the univalent and bivalent bodies may be present, and this occurs in 8 per cent of the cases.

After this work was reported on the antibodies, great advance was made in the prognosis of Rh sensitization. Now it was possible to measure with fair accuracy the true titer of the Rh antibodies in the maternal circulation. These tests could be made for both types of antibodies, the agglutinins as well as the blockers. When titer tests for antibodies are lower than 1 to 4 dilutions, there is usually little effect upon the infant. Early development of a low titer, however, may possibly mean abortion or miscarriage. If the antibodies do not show before the thirtieth week, and the strength increases rapidly, cesarean section may be indicated. Serum conglutination tests of over 10 units or 1 to 10 dilution result in fetal mortality.

If the titer is extremely high, then the infant will be born dead, and the section would merely expose

*Delivered before the staff meeting of the Bangor Osteopathic Hospital, Bangor, Maine, January 25, 1948.

the mother to unnecessary risk. Therefore, a "shift to the left," according to Primrose, Van Dosser and Philpott,[4] means a poor prognosis.

We can say that the more intense the antibody titers and the longer the time antepartum that they are demonstrable the more possible hemolytic disease is in the infant. Also the findings seem to show that the blockers are protective to the red blood cells in that higher titers of blockers are possible before fetal cells begin to suffer. Some reports show that survival of the infant is better with more blockers present.[5] Page, Hunt, and Lucia[6] suggest similar titer tests for prognosis.

The presence of isoimmunization which occurs in 5 per cent of Rh incompatible marriages means erythroblastosis in some form in 67 per cent of births in such marriages. Isoimmunization is not synonymous, therefore, with erythroblastosis fetalis.

Regarding primiparas, 9 per cent of cases of isoimmunization have been found in them. Forty-eight per cent of multiparas showed isoimmunization in the second pregnancy; 51 per cent from the third to the eleventh.[7]

Intragroup Rh incompatibility is possible. In other words, mothers who are Rh-positive have given and do occasionally give birth to erythroblastotic infants. Many authorities advise doing anti-Rh determinations in all pregnancy cases—Rh-positive as well as Rh-negative. Such a procedure would not be practical for most private work. Intragroup incompatibility shows but mild changes in the infant. These changes can be found if routine blood tests are done on all newborns, and Rh tests be made using the three antiserums, Rh_0, Rh_1, and Rh_2.

Tisdall, Marsh and Hartnett[8] report a series of cases of intragroup Rh incompatibility, and advise that all jaundiced babies be investigated. Rh sensitization has been reported in primiparas and the number of cases reported is becoming more numerous; therefore, because the patient is a primipara does not eliminate the possibility of Rh incompatibility. Antibody determination should be done, and titers watched if antibodies are found.

Symptoms of hemolytic disease usually show within 24 hours after birth; however, some cases do not manifest themselves for several weeks.

The pathologic changes in the infant vary from slight hepatic damage to involvement of nearly all the body tissues. The entire reticuloendothelial system may be affected. This would account for the severe cases of icterus gravis that are irreversible even with complete exsanguination. Thirty-eight per cent of surviving infants have shown meningeal sequelæ. Kernicterus is most usual, resulting in paralysis of various forms or mental retardation.

Subclinical hemolytic disease is possible, and may be diagnosed as such when at least three of the following are present:

1. More than 5 nucleated red blood cells per 100 white blood cells
2. Sustained jaundice
3. Spleen 1 cm. or more below the costal margin
4. Liver 1 cm. or more below the costal margin
5. Petechiæ
6. Less than 100 per cent hemoglobin

Further evidence of more severe types would be:

1. Rh antibodies in fetal blood (free or combined)
2. Edema
3. Macroglossia
4. Enlarged placenta
5. Fetal and placental erythroblastosis
6. Low prothrombin level

Treatment of hemolytic disease in the newborn should be divided into the types as seen clinically.

Hemolytic anemia is the simplest form of erythroblastosis. It may not manifest itself for a number of days or weeks following delivery. In a suspected case of possible Rh incompatibility, it should be watched for. Hemoglobin determinations once or twice a day, and differential counts daily, for 10 days, and thereafter as necessary, should be done. If there is no marked anemia, transfusions or exsanguination are not recommended by most authorities. If the hemoglobin drops below 11 grams, transfusions of Rh-negative type O blood should be given in amounts of 10 cc. per pound of body weight. Two transfusions separated by 25 hours are usually sufficient. An injection intramuscularly of 10 to 20 cc. of the mother's blood has a favorable reaction as a foreign protein to stimulate liver function. A high protein, low carbohydrate, and low fat diet supported with liver extract is advisable.

In icterus gravis, the second more severe form of erythroblastosis, death is due to hepatic damage from excessive red blood cell hemolysis and liver erythropoiesis. Therefore, the prognosis is based upon proper liver function as much as anything else. For this reason complete exsanguination of the infant's Rh-positive blood is advised. This is accomplished by exposing a vein in the ankle or arm of the immobilized infant. Then, exposing either the radial artery, or the anterior fontanel for withdrawal from the longitudinal sinus, about 50 cc. is withdrawn and transfusion begun. Withdrawal and transfusion must be kept at just about the same speed thereafter. Assuming that the infant's blood volume is 250 cc., or 10 per cent of its weight, it will take approximately an hour to an hour and a half with this technic to replace 75 per cent of the infant's blood. A 10 cc. solution of 10 per cent calcium gluconate given by vein will counteract the citrate solution used as an anticoagulant. Heparin ½ to 1 cc. is given once or twice during the procedure to prevent clotting at the point of withdrawal. This process of exsanguination releases the liver from having to excrete the destroyed cells and, therefore, clog the bile passages. Seventy-five to 100 cc. more Rh-negative blood than the amount removed should be given. The mother's cells may be used for transfusion in small amounts after they have been washed and resuspended in pooled plasma. This removes the anti-Rh factors present in her serum and gives the infant Rh-negative blood. Serum globulin from pooled human blood is used in concentrated form to increase the proteins which helps liver function, and maintains protein levels. This has the same effect as the intramuscular blood, and is better.

Complete exsanguination temporarily changes the infant's blood from Rh-positive to Rh-negative. It will return to Rh-positive in a few months. Rh-positive blood can be used later, therefore, for transfusions if necessary. Transfusions of Rh-positive blood have been given with good results by some physicians, but most agree that it is a dangerous procedure.

Vitamin K should be given to the donors before the blood is drawn; the liver will convert it to be used as prothrombin. It is also advisable to give it to the infant, but it is not so effective because of the low hepatic function. It should be given to the infant until the prothrombin time is normal. Methionine has been

given to stimulate liver function, as has choline chloride 3/10 gram daily by mouth. The mothers are instructed not to nurse the infants as the Rh anti-factor is transmitted by the breast milk.

Premature delivery by cesarean section or induced labor may be advisable if a careful check of the titers has been done. At present, it seems unwise to advise cesarean section solely on the basis of the serologic findings of anti-Rh antibodies. The titer concentration should be the determining factor.

Rh-negative blood is available in large quantities from the Philadelphia Serum Exchange, as well as the Blood Bank of the Postgraduate Hospital in New York.

The third condition of erythroblastosis is fetal hydrops in which the infant is stillborn, or dies immediately after birth, and no life-saving measure is as yet known.

SUMMARY

The present-day knowledge regarding the Rh factor has been reviewed from the literature. The symptoms, pathology, and treatment have been presented. The most advisable therapies according to recognized authorities have been reported. The more contradictory types of treatment have been touched upon lightly. It is conceivable that osteopathic manipulative therapy directed toward normalizing and stimulating proper liver function would greatly increase the chances of these infants.

358 Commonwealth Ave.

REFERENCES

1. Landsteiner, K., and Wiener, A.S.: Studies on agglutinogen (Rh) in human blood reacting with antirhesus sera and with human isoantibodies. J. Exper. Med. 74:309-320, Oct. 1941.

2. Unger, L. J., and Wiener, A. S.: Observations on sensitization to Rh factor by blood transfusion. Am. J. Clin. Path. 15:280-285, July 1945.

3. Levine, P.; Katzin, E. M., and Burnham, L.: Isoimmunization in pregnancy, its possible bearing on etiology of erythroblastosis foetalis. J. Am. M. A. 116:825-827, March 1, 1941.

4. Primrose, T.; van Dosser, G. J. E., and Philpott, N. W.: Graphic method of prognosis for infant in antenatal care of Rh-immunized pregnant women. Am. J. Obst. & Gynec. 54:662-667, Oct. 1947.

5. Howard, J., *et al.*: Clinical significance of Rh antibodies (Rh agglutinins and blocking antibodies) in sera of Rh-negative mothers; study of 179 cases. Am. J. Obst. & Gynec. 53:569-595, April 1947.

6. Page, E. W.; Hunt, M. L., and Lucia, S. P.: Antepartum prediction of hemolytic disease of newborn. Am. J. Obst. & Gynec. 52:794-796, Nov. 1946.

7. Sacks, M. S., *et al.*: Studies in Rh-isoimmunization in pregnancy; observations in a series of 96 sensitized women. Am. J. Obst. & Gynec. 54:400-414, Sept. 1947.

8. Tisdall, L. H.; Marsh, M. R., and Hartnett, E. T.: Erythroblastosis fetalis. Am. J. Obst. & Gynec. 54:1047-1051, Dec. 1947.

The Cranial Aspect of Emergencies of the Newborn

BERYL ARBUCKLE, D.O.
Philadelphia

Many references to deformities of the head are found in early literature. Homer in his tales of the Trojan wars described the unsightly peaked head of Thersites. Hippocrates considered these deformities as constitutional anomalies. Head deformities are also mentioned by Aristophanes and Galen.

For over a century such deformities have aroused scientific interest. Cranial fractures due to delivery were described by Hirt as early as 1815. Whereas often the tearing of the squamous portion of the occipital bone from its lateral parts is attributed to forceps extraction, Hartmann described a spontaneous delivery that resulted in an asphyxiated infant with a depressed fracture of the left frontal bone and a pressure mark on the occipital bone. Ehrenfest described the possibility of the loosened squama being pushed under the condylar parts due to compression of the head in a fronto-occipital direction or of the medulla being guillotined in the foramen magnum by the slipping condyles. There are reports by Frank and others of successive babies of the same mother exhibiting similar cranial injuries due to some pelvic anomaly.

In 1843 Little of London described cerebral spastic paralysis found in infants born after difficult or prolonged labor. In 1862 a subsequent paper of his ascribed this condition more definitely to birth injury with a large percentage of cases due to cerebral hemorrhage. Of cephalic traumatic injuries the most important are those affecting the brain and meninges, and obviously any injuries of the cranial bones from fractures to indentations will affect the cranial contents.

About 1900 Murray and Kerr suggested manual squeezing and massaging of the area surrounding a cranial depression in a newborn. Later others recommended this, though it was pointed out that the effect of such effort could be of scarcely more advantage than for that of appearance.

In 1877 Tapret is credited with the first attempt to correct these indentations by instrumental means. There is much written upon the various methods which followed this attempt and also various reasons offered which would necessitate such intervention. In 1943 there were detailed reports by Faber and Towne, King and Woodhall of cutting the cranial bones in cases of craniostenosis in such a way as to allow greater cranial capacity with the result, after months of observation, of improvement in the mental behavior of such patients.

In 1839 Somering pointed out that there seemed to be an association between closure of certain skull sutures and head deformities. Virchow in 1851 classified malformations of the skull on the basis of relation of growth to premature synostosis of cranial bones. It was he who brought to attention the fact that growth was inhibited in a direction perpendicular to the synostosed suture line. During the past century various theories for these malformations and the premature synostosis of sutures have been advanced by as many different people. Such theories as inflammation of the embryonic sutures, defective germ plasm, improper plantation of ossification centers, too small amniotic sac, or too great a quantity of amniotic fluid have been advanced and followed, of course, by arguments pro and con. One of the questions asked was, Why would the basal skull bones be affected and not the limb buds and so forth?

Because of the craniostenosis or premature synostosis of the cranial sutures, the damaging effect of intracranial pressure was early recognized. Under these conditions the skull was unable to expand for the purpose of accommodating the growing brain.

Dr. Andrew Taylor Still said, "Keep your searchlight forever on the brain, for from it we derive all power."

To Dr. W. G. Sutherland we are indebted for the knowledge of not merely what many of these deformities are, but how many of them may be corrected and their dreadful sequellae avoided.

Also from the writings of Holland and Crothers we are able to understand better the mechanism of the cranial deformities and many intracranial injuries produced by the stresses of labor.

No matter how "easy" a birth the physical trauma caused thereby has its own peculiar dangers to the infant. Let us consider the mechanism of this process of labor and delivery. There are gentle uterine contractions long before the mother is aware of labor and then with the onset of labor these contractions are more severe. In a right occiput anterior presentation there will be a rotation of occiput of the fetus dragging the squamous portion from left to right. This will result in the right lateral mass being more lateral posteriorly while the posterior part of the left condylar mass will be pulled more medialward. During the last part of the descent, the caudad margin of the squama may be pushed below one or both condylar parts. To further complicate this there may be an occipitofrontal compression resulting in a more acute angle of the occipital hinge. Depending upon the position of the fetus and the consequent manner of descent, the various positionings of the cranial bones of the newborn take place.

Due to the forces of labor, and to facilitate delivery, the cranial capacity is reduced by the blood and cerebrospinal fluid being forced out of the cranium and the hind-brain probably forced low in the posterior fossa and foramen magnum. The shape is also necessarily changed to permit more easy passage through the birth canal. The injuries of birth are, of course, due to failure of fetal tissue to resist these forces and strains.

The earliest result of birth injury that may be witnessed is the possible failure of the infant to breathe. The newly delivered baby has a medulla much less irritable than that later in life. This excitability of the medulla in the newborn may be decreased by drugs given the mother, but mechanically it may also be reduced by pressure of the medulla against the anterior rim of the foramen magnum. There are cases reported where, after other artificial means to initiate respiration have failed, success has been achieved by osteopathic cranial technic relieving the pressure of the tentorium on the contents of the posterior cranial fossa, thus restoring normal intracranial pressure and alleviating the disturbances resultant upon crowding of the medulla.

It should be remembered that the vault bones are laid in membrane and in the infant they each consist of but one plate. Between the bones are no sutures, the intervening spaces being completed by membrane, and widening at the corners of the parietals into fontanels, six in number, the frontal, the occipital, two sphenoidal and two mastoid. Reasonable physiologic moulding of these vault bones causes no harm, serves its purpose, and in the absence of undue complications, within a few hours to days corrects itself. But if this moulding is excessive and the disturbances to the intracranial membranes great, the condition does not right itself and the possibility of any of the various disturbing cerebral or cerebellar symptoms lies ahead.

It has been observed in years gone by that in a nonfatal case of cranial injury, therefore, it is impossible to prognosticate whether the child will be permanently well or might later in life develop physical or mental defects, and especially epilepsy, which might be ascribed to an unrecognized intracranial trauma sustained at birth.

Let us consider a moment the functions of the reduplications of the cranial dura mater in the falx cerebri and the tentorium cerebelli. Between the layers of these membranes at their attachment to the bones and to each other lie important veins or sinuses of the brain. In the adult the task of holding the cranial contents in position is ascribed to these membranes, while in the infant their function is to resist cranial distortion and to protect the brain from damage due to forces of labor. Dr. Still also spoke of the brain as the "engine of life."

The strains upon these membranes by the stresses of labor may have serious results. If because of a prolonged labor with cephalic presentation in a narrow pelvis there should be a great peak at, or slightly anterior to, the lambda or perchance a crowding of the cranium in an occipitofrontal direction, there would be an upward strain of the middle two-thirds of the falx, which, in turn, would be transmitted to the tentorium thus further raising its summit. This would cause the angulation to be more pronounced at the junction of the vein of Galen and the straight sinus, increasing the strain on veins entering the vein of Galen and also on the veins entering the lower aspect of the straight sinus. The strain on these latter veins may be further increased by the downward displacement of the hind-brain and this is one of the most frequent sites of hemorrhage.

Much of the excessive moulding is maintained because of these unusual strains upon the membranes. If the tentorium has been dragged further upward at its summit by the attachment of the falx because of the anteroposterior compression of that membrane, the superior border of the petrous portions of the temporal bones to which the tentorium attaches will be less divergent at their posterior extremities, or the petrous portions will be in internal rotation; the posterior cranial fossa will thus be deeper and its width less.

In the correction of this scaphocephalic skull all these points must be given full consideration. By externally rotating the petrous portions of the temporal bones with traction on the sacrum for maintenance of tenseness of intraspinal membranes, the tensity will be increased on the vertical fiber of the tentorium, lowering its summit and drawing down the middle two-thirds of the falx. At the same time care must be taken to direct the condylic parts of the occiput and its squama so that the foramen magnum may not be further compressed or the occipital hinge more acutely angulated. Thus the posterior fossa will be widened so the hind-brain will not be so compressed. This relieves the pressure on the floor of the fourth ventricle wherein lie the primary centers, the disturbance of which causes the early symptoms attributed to birth injury.

In cases of vomiting of the newborn we have not failed to find a parietomastoid lesion unilateral or

bilateral. This, of course, will help to fix the tentorium, at its attachment to the inside of the asterion, and being fixed will not be of much help in the natural correction of moulding.

We know that one of the characteristics of an osteopathic lesion is restriction of motion, whether it be bony, muscular, ligamentous, membranous, or fluid. It was 200 years ago that Swedenborg advanced the thought that the brain moved, and he spoke also of the circulation of the cerebrospinal fluid. Investigation along these lines has continued and in more recent years we have such work as that of Speransky to help us understand in what manner and direction this cerebrospinal fluid moves from its formation, and passes out of the craniovertebral cavity to its destination. To quote Dr. Still, "The cerebrospinal fluid is one of the highest known elements in the human body . . . and unless the brain furnishes this fluid in abundance, a disabled condition of the body will remain."

Another lesion not too infrequently observed in the newborn which will cause a fixation of the tentorium is a buckling of the mastoid portion of the temporal bone. It is the comprehension of this early lesion which makes possible the diagnosis of certain otherwise perplexing temporal lesions in later life.

It is indeed a more delicate task to apply cranial treatment to the newborn infant and small child than it is to administer such care to the fully and reasonably normally developed skull. There are many more bones or portions of bones to consider in the infant. There are four parts to the occiput, three to the temporal, and three to the sphenoid, and two separate frontal bones. As has previously been stated, the crowding, malalignment, or displacement of portions of the occiput carry potential danger to the foramen magnum and its contents and also to the intracranial and intraspinal membranes. The lateral masses seem to have an oblique plane of union with the basilar part; the obliquity is directed from the junction of the anterior one-fourth and the posterior three-fourths of the condylar facet dorsally, cephalward, and medialward through the hypoglossal canal. Clinically it appears that compression, crowding, or tipping of this area on one side or both is responsible for either longitudinal or transverse curling or folding of the tongue in the newborn. With such change of the condylic parts there must necessarily be a comparable change of the basilar portion. It is in the groove of this basilar portion that the medulla lies.

We are all conscious of the local and general symptoms possible with a sacroiliac strain when only a few of the nerves are involved. Is it not reasonable to believe that if allowed to occur, a lesion or a developmental irregularity of this basilar portion of the occipital bone which cradles the medulla, will be responsible for many of the neurologic phenomena observed in later life?

Also, in dealing with the infant skull, we do not have developed some of the strong bony processes found in the adult. There is no mastoid process and as yet no jugular process upon which the temporal bone may pivot. The base of the infant skull is almost flat, and at autopsy we see how the inferior part of the mastoid portion may internally override the condylar part of the occiput. Thus we understand the formation of the change of beveling in the posterior and inferior arm of the occipitomastoid suture of later life. The squamous portion of the occipital bone, entering into the formation of this suture, is beveled at the expense of the external table and the condylar part is beveled internally to articulate with the respective corresponding internal and external beveling of the posterior and inferior borders of the mastoid portion of the temporal bone. That is, the pivotal point of this suture is at the extremity of the occipital hinge. It appears that the facing or planes of the articular surfaces of the inferior or anterior limb of the occipitomastoid vary in direction just as do those articular facets of the lumbosacral articulations. This particular articulation under consideration may be almost directly vertical on the side to which the squama of the occiput has been rotated and the lateral mass compressed from the medial to lateral aspect, whereas upon the other side where the mechanics, of shall we say delivery moulding, have been directly opposite, the plane of direction of this lower limb of the occipitomastoid articulation will be much more nearly horizontal, being inclined somewhat cephalward medially.

So proportionately the intracranial membranes are of far more importance to the infant than they are in later life. Besides all the duties attributed to the adult membranes, those of the infant must afford protection to the developing neural components that is later undertaken by bony structures. The construction of the dural membranes is extremely complicated. There are definite strengthening fibrous bands throughout the yellow elastic tissue. Early investigators have named these "stress bands of the dura." There are horizontal, vertical, transverse, and circular groups with their various balancing tripods which present a fascinating continuation of the thoughts of others concerning the supporting triangles of the human mechanism. However, this paper does not warrant space or time for the details of this particular anatomical construction which has been partly covered in past papers and the results of recent investigations will be given in the near future.

In every delivery there is a strain on some of the stress fibers in the tentorium. In the mature skull cranial articular lesions are responsible for membranous strains or lesions. In the infant various membranous strains produced by the stresses of labor are responsible for the development of the cranial anomalies in the wake of which trail so many human physical, neurological, and psychological abnormalities.

So far we have considered the immediate effect of these various injuries, such as difficulty in respiration, tremors, convulsions, cyanosis, inability to cry, difficulty in sucking and swallowing, and projectile vomiting.

At this point I would like to cite the case of one newborn. The mother had been in labor 12 hours with the baby in face presentation. At this time cesarean section was performed, but the baby had already sustained its injury. The symptoms were cyanosis, weak cry, tremors, and projectile vomiting. Besides the malalignment of the portions of the occiput around the foramen magnum and bilateral buckling of the mastoid portions of the temporals, the anterior fontanel was obliterated, the frontal bones were fairly flat, and the nasion so depressed that its angulation seemed almost acute.

Before cranial therapy was requested for this case, the parents had been told that the baby's brain had been damaged. Let us remember that at birth the cerebrospinal system is that system which is least developed and the brain is, therefore, at this time of life, far from complete.

Projectile vomiting ceased after the first cranial treatment and the cyanosis gradually disappeared, the further administration of oxygen being unnecessary. After the second treatment the baby was able to suck and swallow its maintenance amount. The next 2 days the baby was left undisturbed by further treatment. The clinical symptoms were entirely eliminated, the forehead was round, there was a good, even anterior fontanel, and the other five fontanels were present, but there still existed the severe angulation at the nasion. With the index finger in the mouth this was corrected easily with the baby's aid in vigorous sucking. This child, now well into her second year, is normal, which we feel justified in attributing to the fact that she was given the benefit of osteopathic cranial therapy.

Let us now consider some of the conditions attributable to cranial birth injury which are not manifested until later. The cerebral palsies form a great proportion of these. It is to be remembered that practically all these children have been handicapped since birth and there has not been chance for the development of primary action patterns. Frequently there are complicating abnormalities of speech, sight, and hearing. Injuries to certain portions of the brain can disrupt muscular control, without damaging intelligence. Because of failure to recognize this fact, too many children are cast aside as feeble-minded and beyond all possible help. Many of these children are oversensitive, possessed of normal desires, affectionate natures, and superior intelligence and yet their physical and mental potentialities are not considered and they are forced into a life of social isolation.

As illustration three cases of spastic paraplegia of the athetoid type will be cited. A girl, aged 11 years, was attending a special school, supposedly because she had a very low I.Q. She wore snow shoes while walking during the day in order to keep her feet apart. At night she slept in braces. Her speech was hesitant. There was slow response and poor coordination of the hands. After about a year of cranial treatment, because of physical improvement, the girl was able to enter a public school and in the first 6 months two of her stories were printed in a school publication. Did she ever have a low I.Q.? Now at the age of 14 she is quick and bright in her mental response, plays the piano well, has a pleasing voice, and her only handicap is an atrophied leg that had been subjected to tenotomy; the other leg developed normally. Now there is a limp, not of the spastic type, but such as we see in a polio victim.

A girl, aged 12 years, was severely afflicted. Her arms, legs, and body were in constant movement and there were grimacing distortions of the face. This child could walk with difficulty and she had many bumps and tumbles. Her legs were covered with bruises and scabs. Her speech could be understood with great difficulty. Her parents had not realized she was deaf until she was 8 years of age. After treatment for a year, during which time excellent progress was made toward overcoming physical handicaps, we were surprised to have her comment upon a topic of conversation. Since then her speech has steadily improved, a result of better hearing. Now after 2 years of treatment and excellent cooperation on the part of the parents, she can walk in a straight line although her body sways. She has good coordination of her hands, and the bruises and sores on her legs have healed.

Boy, aged 14 years, was unable to help himself or talk. He drooled continually. Two psychologists on different occasions had told the parents that the child did not have sufficient intelligence to understand and advised against putting him in an institution. An only child, he had been taken to innumerable doctors and many specialists. He was so extremely athetotic it took three adults to hold him on the table for treatment. Now, at the age of 16, and again due to the excellent and untiring cooperation of the parents in the necessary tedious daily exercise and other help, this boy speaks so that not only the family and neighbors but also strangers understand him. He can dress himself all except left shoe and sock. He is now reading fifth grade books and proud of his spelling. He can now turn the pages himself so that he may read articles for his own pleasure. He is very mechanically inclined and his toys are tools and more tools. While his father holds him under the arms, he now can walk fairly well, though his knees are still badly deformed. Two years ago he had to stay, when placed in a chair, until someone moved him. Now he moves himself all over the house, even up and down stairs. This boy is the personification of cheer, full of life and fun. This particular patient has given me considerable help in the understanding of the management of this type of handicapped child and I realize the full significance of a statement made by Dr. Edward Brown at the National Convention in 1941, "No one will work so hard for a little gain as a cripple." That in itself compensates for all the effort for which this type of practice calls.

Although spastic children form such a large group, among these birth injuries we see many other ensuing conditions, such as slow development in muscular activity or mental ability, or even mental deficiency in its many forms, various eye defects, sinus conditions, or epilepsy, and many more.

Hydrocephalus is a condition which may be caused by a correctable mechanical derangement as demonstrated clinically in cases where increase in size of cranium, which has been continuous, ceases after cranial technic has been started and the child continues to develop normally.

It is not my intent to give the impression that every individual given cranial treatment is going to be entirely cured of his particular affliction. The magnitude of the possibilities of cranial technic, however, in preventing the various sequellae of cranial birth injuries and the restoration that may be achieved after the development of sequellae is challenging.

To Dr. Andrew Taylor Still we are grateful for the osteopathic concept embodying the thought for the need of structural integrity for the preservation of health and happiness, and to Dr. W. G. Sutherland for the knowledge of the way in which to prevent and lessen some of the greatest human hardships and consequent states of unhappiness by application of cranial technic.

920 N. 63rd St.

REFERENCES

Brennemann, J., ed.: Practice of pediatrics. W. F. Prior, Inc., Hagerstown, Md., 1942.

Crothers, B.: Changes of pressure inside fetal craniovertebral cavity. Surg., Gynec. & Obst. 37:790-801, Dec. 1923.

Ehrenfest, H.: Birth injuries of the child. D. Appleton Co., New York, 1922, pp. 14, 15, 19, 21, 26.

Faber, H. K., and Towne, E. B.: Early operation in premature cranial synostosis for prevention of blindness and other sequelae; 5 case reports with follow-up. J. Pediat. 22:286-307, March 1943; correction 22:611, May 1943.

Holland, E.: Cranial stress in foetus during labour and effects of excessive stress on intracranial contents. J. Obst. & Gynaec. Brit. Emp. 29:549-571, 1922.

Rubin, M. I.: Premature synostosis and associated phenomena, in Practice of pediatrics, edited by J. Brennemann. W. F. Prior, Inc., Hagerstown, Md., 1942, Vol. IV, Chapter 25.

Speransky, A. D.: A basis for the theory of medicine, translated and edited by C. P. Dutt. International Publishers, New York, 1944.

Still, A. T.: The philosophy and mechanical principles of osteopathy. Hudson-Kimberly Publishing Co., Kansas City, Mo., 1902.

Swedenborg, E.: The cerebrum and its parts. Vol. I of The brain considered anatomically, physiologically and philosophically. Swedenborg Scientific Association, 1938, p. 209.

PEDIATRIC BOOKS OF INTEREST

Reviewed by Arnold Melnick, A.B., D.O.

SURGICAL TREATMENT FOR ABNORMALITIES OF THE HEART AND GREAT VESSELS. By Robert E. Gross, M.D., William E. Ladd Professor of Child Surgery, Harvard University Medical School. Cloth. Pp. 72 with illustrations. Charles C. Thomas, Springfield, Ill., 1947.

This is the publication of the Beaumont Lecture given last year by Dr. Gross.

While the title suggests a purely surgical thesis, this little monograph is a concise treatise on all the anomalies of the heart that are amenable to surgery. He covers patent ductus arteriosus, pericardial defects, tetralogy of Fallot, right aortic arch, double aortic arch, anomalous right subclavian artery, and aortic coarctation.

Each abnormality is discussed in its general aspects and careful clinical diagnosis described. Proper choice of operative cases is presented and surgical technic explained. Functional drawings and photographs make easy the visualization of the text.

This book is interesting reading for the pediatrician or physician who is interested in the surgical approach to congenital heart disease. It is not a textbook on cardiology or on surgery.

PSYCHIATRY FOR THE PEDIATRICIAN. By Hale F. Shirley, M.D., Associate Professor of Pediatrics and Psychiatry and Executive Director of the Child Psychiatry Unit, Stanford University School of Medicine. Cloth. Pp. 435. The Commonwealth Fund, New York, 1948.

A handy volume on psychiatry uncomplicated in its approach and simple for the pediatrician to read is finally available.

Until now, child psychiatry books were few and these were difficult for the average practitioner to wade through. Shirley's book logically and clearly covers the ground. Its title claims it to be written for pediatricians and its approach bears it out. Starting with the basic concepts of psychiatry and personality, it goes through developmental phases, habit training, physical, mental, and emotional problems. No complicated psychiatric terminology permeates its pages and the problems are lucidly defined and discussed.

Dr. Shirley, as a practising pediatrician and a psychiatrist, is pre-eminently qualified to approach the subject as he has done. The source of the material is Dr. Shirley's lectures on child psychiatry at Stanford, and it is therefore academic and practical at the same time.

This is a book deserving of a spot on every pediatrician's bookshelf. To the pediatric psychiatrist it may add no new knowledge, but its order and clarity will be appreciated by all who read it.

DISEASES OF CHILDREN'S EYES. By James Hamilton Doggart, M.A., M.D., F.R.C.S., Ophthalmic Surgeon, Hospital for Sick Children, Great Ormond Street, London. Cloth. Pp. 288, with 210 illustrations, 32 colored plates. C. V. Mosby Co., St. Louis, 1947.

This is the first volume written on the subject of pediatric ophthalmology.

Doggart draws on his experience at Children's Hospital, Great Ormond Street, London. He presents in orderly fashion all the orthodox eye problems found in the usual ophthalmology textbook, but throughout stresses pediatric aspects. Included are chapters with much detail about the development of the eye structures and the changes which take place as the child grows. Congenital abnormalities and the pathology by which they arise are well covered. Two entire chapters are devoted to squint.

A "must" book for pediatric ophthalmologists, this treatise is recommended for all ophthalmologists and suggested as interesting reading for pediatricians. For the latter, the pediatric topics mentioned in this review are especially advised.

PEDIATRIC BRIEFS

Abstracted from the Bulletin of Pediatrics

Official Publication of the American College of Osteopathic Pediatricians

As the Twig Is Bent by Beryl Arbuckle, July, 1947.—The behaviorism of a person and his capabilities throughout life, Arbuckle writes, are dependent to a large degree on the success or failure of an infant to overcome the effects of labor and delivery. The infant skull is described and the importance of the stress bands is emphasized. Understanding osteopathic fingers, by adjusting the tensions on the stress bands and changing congestion or restriction of the spinal fluid, can help normalize the infant's skull. Because of its intimate anatomical position, the pituitary gland can be affected by such manipulation. Arbuckle says it is the responsibility of the osteopathic physician to see that children have an inclination toward health rather than disease.

Interpretation of Mantoux Tests by Sherwood Berman, July, 1947.—Positive reaction of a Mantoux test means only one thing: a focus of active, quiescent, or arrested tuberculous infection somewhere in the body. A negative Mantoux, Berman states, indicates absence of tuberculosis except in three instances:

"1. After the tubercle bacillus has entered the body, the time that is required to complete the allergic reaction may vary from days to months. Occasionally x-ray evidence may precede the tuberculin reaction, especially if the infection is overwhelming.

"2. There is an unexplained reversal of the tuberculin reaction in advanced tuberculosis or terminal disease, in some patients.

"3. The allergic reaction may be temporarily hindered by the altered physiology of those pathologies productive of severe inanition, dehydration, and marked febrile reaction."

Ascaris Lumbricoides by Rachel Woods, March, 1948.—Woods reports a case which had gone undiagnosed for 3 years, with a presenting syndrome of frequent attacks of fever, anxiety, and irritability. In a complete work-up, a fecal analysis revealed Ascaris lumbricoides and the child, then 7 years old, was given Glauber's salts and hexylresorcinol crystoids. Her recovery was uneventful, and the symptoms ceased.

Malignant Neutropenia by Leo C. Wagner, July, 1947.—A case in a 5 year old male is reported by Wagner. The presenting symptoms were continued high fever for 3 weeks, pallor, shotty cervical and axillary lymph glands, a leukocyte count of 4200 with 23 per cent neutrophils and 75 per cent lymphocytes, and a history of sulfonamide therapy. Differential diagnosis of sulfonamide intoxication, leukemia and ma-

laria (parasites were found in the smear) had to be made. Autopsy diagnosis was malignant neutropenia with septicemia.

Celiac Disease by Ruth E. Tinley, July, 1947.—Tinley emphasizes the importance of careful observation of the child in the sick room, and complete analysis of the child's reaction when ill. She illustrates with a 17 months old baby hospitalized for acute gastroeneteritis, with the complaints of diarrhea and refusal to eat for 3 weeks. Astute observation of his eating habits made the diagnosis of a typical celiac disease apparent.

Sore Throat by Edward Freedman, July, 1947.—Freedman discusses the many differential diagnoses involved in sore throat as an objective or subjective symptom. Emphasis is laid on the pharyngeal affections of infants, which may arise from roseola infantum, teething fevers, postnasal drip, croup, pertussis, influenza, and pneumonia. A reminder is given that today the once rare occurrence of sore throat as a manifestation of an exacerbation of malaria is not as infrequent as before the war.

Foreign Body in Rectum by Mamie Johnson, March, 1948.—The end of a wire hanger was found in the rectum of a 2½ year old boy when Johnston first saw him. Surgical removal was accomplished and several abrasions of the rectal mucosa were found. Recovery was complicated 5 days later by the development of severe pain in the rectum. Inspection revealed an abscess which was opened and drained. Packing was placed in the rectum. No further complication hindered recovery.

Glycogen Storage Disease by Otto Kurschner, April, 1947.—Discussion of a case of von Gierke's disease which had existed for a number of years in a child who then developed Perthe's disease is presented. Kurschner points out that the exact etiology of both diseases is unknown, but that both are suspected of having an endocrine basis. He indicates the apparent relation of both of these diseases to pituitary dysfunction, especially in view of their occurring together in this case.

FOR OUR CHILDREN'S FUTURE

As a Nation we have much unfinished business to do for our children, as is pointed out by the thirty-fifth annual report of the Children's Bureau, outlined in part in [the January, 1948] issue of *The Child.*

Despite the high level of medical care in this country, we are doctor-poor. Particularly is this true in rural areas. Only 4 per cent of our pediatricians are in places of less than 10,000 population, where 60 per cent of our children live.

What are we going to do to bring these rural children within reach of doctors, hospitals, diagnostic clinics?

Every State now has specialized health and welfare services sufficiently well staffed to serve all children needing help.

What are we going to do about the counties—two out of every five—that lack a full-time public-health unit?

What are we going to do about the one-third of our counties that have no public-health nurse; the three out of four rural counties with no regular maternity clinic; the two out of three rural counties with no regular monthly well-child conferences?

We have reduced the infant mortality rate for the Nation to 38 per 1,000 live births, but what are we going to do for the 21 States whose rate is above that figure?

For the Nation as a whole, we have reduced the maternal mortality rate to 21 for every 10,000 live births. But what about the 20 States which lose more mothers than that?

We know that one out of every three deaths in the United States is due to diseases of the heart and blood vessels, and rheumatic fever, including rheumatic heart disease, causes much of the heart disease in later life.

The care of many children attacked by this disease is a public-health problem, because their care is expensive and long-drawn-out. Twenty-two States have programs for the care of children with rheumatic fever or rheumatic heart disease. What about the other States?

We have some 500,000 children with orthopedic defects—clubfoot, harelip, cleft palate, and other handicaps—which are sometimes serious emotional handicaps as well as physical ones. Some of these half-million children are being cared for under State crippled children's services. But every State knows of crippled children who are forced to go without care because the State is unable to supply it.

The list of physically blighted children goes on. Some 170,000 have cerebral palsy, and at least 70 per cent of these could be educated and trained to live useful, satisfying lives. We have almost nothing to offer them in public programs, and yet the cost of the training and care they should have is beyond the reach of many of their parents.

Our schools, year after year, find children with defective hearing, with bad eyesight, with bad teeth. We send them home with notes, urging their parents to do something about Johnny's bad teeth and Mary's poor eyes, knowing full well that in most cases their parents, reading the notes, can only worry some more.

We are concerned about our juvenile delinquency, knowing that a child in serious difficulty with the law is an unhappy, maladjusted child needing special attention. We have child-welfare workers to help these and other children with special needs, such as children born out of wedlock, but we have only 2,200 such workers for the whole country.

We have much more to learn about the physical and emotional growth of children. Research and action must go hand in hand.

The question that faces us is simply this: How deeply do we care about moving ahead on these unsolved problems? —Oscar R. Ewing, *The Child,* January, 1948.

INFANT MORTALITY IN 1946

The infant mortality rate in 1946 was 33.8 deaths under 1 year per 1,000 live births, or 11.7 per cent less than the rate of 38.3 in 1945, according to figures of the National Office of Vital Statistics, released April 21 by Oscar R. Ewing, Federal Security Administrator. The number of infant deaths which occurred during 1946 was 111,063, or 6,379 more than during 1945. This rise reflects the tremendous increase in the number of births during 1946. The relative frequency of infant death, as measured by the infant mortality rate, decreased.

The infant mortality rates shown here are the number of deaths under 1 year of age during a given year per 1,000 live births which occurred during that year. This rate is influenced by changes in the annual number of births. In years such as 1946, in which the number of births increased appreciably from the preceding year, the rate is understated.

The five leading causes of death during infancy, and the infant mortality rate in 1946, were: premature birth—12.1, congenital malformations—4.5, pneumonia and influenza (combined)—3.8, injury at birth—3.6, diarrhea, enteritis, and ulceration of the intestines (combined)—1.7.

Almost three-fourths of all infant deaths occur within one month of birth. The first days are particularly hazardous. In 1946, 33.9 per cent of all deaths occurred under 1 day of age, 25.6 per cent during the remainder of the first week, and 11.7 per cent during the second, third and fourth weeks. Between 1945 and 1946, the infant mortality rate during the first 3 days after birth increased, while decreases occurred for each of the older age groups.

Among the States, the highest infant mortality rate in 1946 was 78.2 for New Mexico and the lowest was 27.2 for Utah. All but 5 States experienced a decrease in their infant mortality rates between 1945 and 1946. In comparing State rates, the qualification mentioned above regarding changing numbers of births must be borne in mind. Consideration should also be given to the fact that many State rates are based on relatively small numbers of deaths. A small difference in the number of deaths may therefore result in a relatively large difference in the rate without necessarily indicating the same relative change in underlying mortality conditions.

Conventions and Meetings

Announcements

American Osteopathic Association, Annual Meeting, Boston, July 19-23 inclusive. Program Chairman, George W. Northup, Morristown, N. J.

Academy of Applied Osteopathy, Boston, July 23, 24. Program Chairman, Robert S. Roscoe, Cleveland, Ohio.

Advisory Board for Osteopathic Specialists, Hotel Statler, Boston, July 18-21.

American Association of Osteopathic Colleges, Hotel Statler, Boston, July 16, 17, 20.

American Association of Osteopathic Examiners, Hotel Statler, Boston, July 20.

American College of Osteopathic Internists, Hotel Statler, Boston, July 21.

American College of Neuropsychiatrists, Hotel Statler, Boston, July 20, 21.

American College of Osteopathic Obstetricians, Hotel Statler, Boston, July 16-18. Program Chairman, Julian L. Mines, Philadelphia.

American College of Osteopathic Pediatricians, Hotel Statler, Boston, July 19, 20.

American College of Osteopathic Surgeons, Hotel Claridge, Atlantic City, N. J., October 10-14. Program Chairman, J. O. Watson, Columbus, Ohio.

American Osteopathic Board of Dermatology and Syphilology, Boston, July 18.

American Osteopathic Board of Internal Medicine, Boston, July 17-19.

American Osteopathic Board of Neurology and Psychiatry, Hotel Statler, Boston, July 16.

American Osteopathic Board of Obstetrics and Gynecology, Boston, July 18, 19.

American Osteopathic Board of Pathology, Boston, July 18.

American Osteopathic Board of Pediatrics, Boston, July 16, 17.

American Osteopathic Board of Proctology, Boston, July 18, 19, 21.

American Osteopathic Board of Surgery, Boston, July 16-18.

American Osteopathic College of Proctology, Copley Plaza Hotel, Boston, July 21.

American Osteopathic College of Radiology, Hotel Claridge, Atlantic City, N. J., October 10, 11. Program Chairman, A. Carman Pettapiece, Portland, Me.

American Osteopathic Society for the Study and Control of Rheumatic Disease, Boston, July 18. Program Chairman, Elizabeth S. Carlin, Hempstead, L. I., N. Y.

Arizona, Westward Ho Hotel, Phoenix, May 14-16.

Arkansas, Albert Pike Hotel, Little Rock, May 21, 22. Program Chairman, H. V. Glenn, Stuttgart.

Association of Osteopathic Publications, Hotel Statler, Boston, July 17.

Auxiliary to the American Osteopathic Association, Copley Plaza Hotel, Boston, July 19-22.

Canada: See Regional Osteopathic Convention.

Child Health Conference and Clinic, Municipal Auditorium Arena and Little Theatre, Kansas City, Mo., May 10-12. Program Chairman, L. Raymond Hall, Kansas City, Mo.

Florida: See Georgia.

Georgia and Florida, Ansley Hotel, Atlanta, May 27-29. Program Chairman, Chan L. Plair, Albany, Ga.

Idaho: See Northwest Osteopathic Convention

Indiana, Van Orman Hotel, Fort Wayne, May 13-15. Program Chairman, C. W. Dygert, Fort Wayne.

Iowa, Hotel Fort Des Moines, Des Moines, May 17, 18. Program Chairman, H. L. Gulden, Ames.

Kentucky, Louisville, October. Program Chairman, Harold D. Benteen, Ashland.

Maine, Belgrade Hotel, Belgrade Lakes, June 17-19. Program Chairman, Earl H. Gedney, Bangor.

Manitoba: See Regional Osteopathic Convention.

Massachusetts, Hotel Kenmore, January 15, 16, 1949. Program Chairman, Samuel B. Jones, Worcester.

Minnesota, Lowry Hotel, St. Paul, May 14, 15. Program Chairman, E. S. Powell, St. Paul.

Missouri, Jefferson Hotel, St. Louis, October 18-21. Program Chairman, J. R. Dougherty, Vandalia.

Montana, Missoula, July.

National Board of Examiners for Osteopathic Physicians and Surgeons, Hotel Statler, Boston, July 17, 20, 23.

NEW Adaptation of **ARGYROL**

ARGYPULVIS

***for combined office and home treatment of* TRICHOMONIASIS**

For Use by the Physician
7-gram bottles fitting Holmspray or equivalent powder blower

For Home Use by the Patient
2-gram capsule for insertion by the patient

The proved effectiveness of ARGYROL as a *protozoacidal, bacteriostatic* and *detergent* agent of choice is now made available in a new field of application.

As amply demonstrated in the work of Reich, Button and Nechtow*, ARGYPULVIS fully utilizes this protozoacidal property in a form most readily adapted to essential office treatment and supplementary home regimen.

Also, the *bacteriostatic, detergent* and *demulcent* properties of ARGYPULVIS offer additional advantages in the treatment of cervicitis and vaginitis associated with Trichomoniasis.

Composition ... Physical Properties

ARGYPULVIS contains powdered ARGYROL (20%), Kaolin (40%) and Beta Lactose (40%) ... finely milled, to provide the fluffiness which makes for easy insufflation, and with an attraction for water which promotes fast action.

ARGYPULVIS

2-gram capsules in bottles of 12

7-gram bottles in cartons of 3

INTRODUCTORY TO PHYSICIANS: On request we will send professional samples of ARGYPULVIS (both forms) together with a reprint of the Reich, Button, Nechtow report.

Write to: A. C. BARNES COMPANY, NEW BRUNSWICK, N. J.

**Reich, Button and Nechtow, "Treatment of Trichomonas Vaginalis, Vaginitis," Surgery, Gynecology and Obstetrics, May 1947, pp. 891-896*

MONOCAINE
HYDROCHLORIDE

FOR DEEP, SAFE, LOCAL ANESTHESIA

METAL CAP ANESTUBES
(ANESTHETIC CARTRIDGES)

FOR EFFICIENCY AND CONVENIENCE

Monocaine Hydrochloride—isobutylamino-ethyl-p-aminobenzoate hydrochloride—introduced in 1937, has been used in over 100,000,000 injections by physicians and dentists in all types of operative procedure.

This effective local anesthetic is available for your use in convenient cartridge form—*Metal Cap Anestubes* (Anesthetic tubes). As illustrated, the tube is inserted into the frame of the syringe. The proximal end of a double pointed needle punctures the aluminum cap of the tube and makes contact with the solution. The puncturable surface may be flamed for sterilization. Pressure on the piston forces the plunger down the tube and expels the solution, drop by drop, through the needle.

The Anestube (cartridge) system assures sterility; eliminates the possibility of leakage or barrel breakage during injection. It is safe, efficient and convenient. Metal Cap Anestubes are available in 1 cc., 2¼cc. and 5 cc. sizes.

NOVOCOL CHEM. MFG. CO., INC.
2923 Atlantic Ave., Brooklyn, N. Y.

Please send details on Monocaine and Metal Cap Anestubes.

Dr.....

Address.....

.....

NOVOCOL CHEMICAL MFG. CO., INC
2911-23 Atlantic Avenue, Brooklyn, N. Y.
Toronto • London • Buenos Aires • Rio De Janeiro

Monocaine is the registered trade mark of the Novocol Chemical Mfg. Co., Inc.

National Osteopathic Interfraternity Council, Hotel Statler, Boston, July 19.

New Jersey, Newark, May 7-9. Program Chairman, R. W. Davis, Jr., Audubon.

New Mexico, Clovis, September.

New York, Hotel New Yorker, New York City, October 15, 16. Program Chairman, David J. Bachrach, New York City.

North Dakota, Bismarck, May. Program Chairman, J. O. Thoreson, Bismarck.

Northwest Osteopathic Convention, Davenport Hotel, Spokane, Wash., June 14-16. Program Chairman, E. D. Mosier, Puyallup, Wash.

Ohio, Deshler-Wallick Hotel, Columbus, May 9-11. Program Chairman, W. W. Custis, Dayton.

Oklahoma, Biltmore Hotel, Oklahoma City, October 12-14.

Ontario, Welland House, St. Catherines, May 6-8. Program Chairman, C. J. Heaslip, Hamilton.

Oregon: See Northwest Osteopathic Convention.

Osteopathic College of Ophthalmology and Otorhinolaryngology, Eastland Hotel, Portland, Me., July 15-17. Program Chairman, A. B. Crites, Kansas City, Mo.

Osteopathic Cranial Association, Copley Plaza Hotel, Boston, July 18.

Osteopathic Vocation Group of Rotary International, Hotel Statler, Boston, July 21.

Osteopathic War Veterans Association, Hotel Statler, Boston, July 22.

Osteopathic Women's National Association, Copley Plaza Hotel, Boston, July 18-20.

Pennsylvania, Penn Harris Hotel, Harrisburg, September 24-26. Program Chairman, Stuart F. Harkness, Harrisburg.

Raton Convention, Raton, N. M., May 27-29.

Regional Osteopathic Convention (Manitoba, Ontario, Saskatchewan, Alberta, British Columbia, Minnesota, North and South Dakota), Winnipeg, Manitoba, August 13, 14.

Society of Divisional Secretaries, Hotel Statler, Boston, July 16, 17, 19.

South Dakota, Mitchell, June 6-8. Program Chairman, M. W. Meyers, Hudson.

Southeastern Conference: See Georgia and Florida.

Tennessee, Nashville, October. Program Chairman, Perry Bynum, Memphis.

Vermont, September 29, 30. Program Chairman, Marvin May, Brandon.

Washington: See Northwest Osteopathic Convention.

West Virginia, McClure Hotel, Wheeling, May 30, 31, June 1.

Western States Proctologic Society, Brown Palace, Denver, May 31, June 1. Program Chairman, Richard H. Hurst, Denver.

Wisconsin, Wisconsin Hotel, Milwaukee, May 5-7. Program Chairman, George C. Heilman, Wauwatosa.

Wyoming, Rock Springs, June.

OFFICIAL AND AFFILIATED ORGANIZATIONS

CALIFORNIA

State Society

The program as announced in advance for the annual meeting at Bakersfield March 30-April 3 was to include the following: "Nonsurgical Diseases of the Gallbladder," Robert K. Schiefer, San Diego; "Liver Function Tests of Liver Disease," Sidney Kerner, Beverly Hills; "Significance of Upper Abdominal Pain," William T. Barrows, Oakland; "Significance of Lower Abdominal Pain," Loring W. Mann, Pomona; "Eye-Ground Studies with Slides Relative to Hypertension," Alfons I. Wray, Los Angeles; "Upper Respiratory Problems," Ward G. DeWitt, Long Beach; "New Activities of the State Department of Public Health," Wilton L. Halverson, M.D., Director of Public Health, State of California; "Hospital Construction Problems in California," Forest J. Grunigen, Los Angeles; "Legislative and Administrative Trends in the Hospital Field," Mr. Philip C. Jones, Los Angeles; "Hospitals and the State Department of Public Health," P. K. Gilman, M.D., Chief, Bureau of Hospital Surveys, Department of Public Health, State of California; "Radiographic and Laboratory Diagnosis of Peptic Ulcer," Louise F. Swift, Burbank; "Medical Diagnosis and Treatment of Peptic Ulcer," William D. Long, Los Angeles; "Surgical Treatment of Peptic Ulcer," H. B. K. Willis, Los Angeles; "Ambulatory Gynecology," Vay L. Peterson,

Los Angeles; "Saddle Block Anesthesia; Report of 250 Cases," Dorothy J. Marsh, Los Angeles; "Obstructive Prostate," Wesley S. Carey, Oakland; "Rheumatic Heart Disease," James M. Watson, Los Angeles; "Relationship of Autonomic Imbalance to the Allergic State," Wayne G. Peyton, Sacramento; "Hip Affections Other Than Tuberculosis in Children," Karl P. B. Madsen, Oakland; and "Use and Abuse of External Skeletal Fixation," A. A. Erickson, Monterey Park.

Fresno County

Basil K. Woods, Los Angeles, spoke on "The Early Diagnosis of Cancer," at the meeting held at Clovis February 11.

Kern County

W. Ballentine Henley, president, C.O.P.S., and Harold Carter, both of Los Angeles, spoke at the meeting at Bakersfield in February.

Pasadena

"Recent Trends in Radiation Therapy" was discussed by Owen Lindsay, Los Angeles, at the meeting held at Pasadena February 19.

COLORADO

State Society

The program announced in advance for the monthly meeting on March 3 at Denver included the following: "Differential Diagnosis Between Intra-Abdominal and Urological Lesions," C. Lloyd Peterson; "Various Forms of Conjunctivitis; Diagnosis and Treatment," C. C. Reid; "Council on Public Health Report," H. E. Lamb, all of Denver, "Osteopathic Approach to the Maintenance of Health," O. D. Fry, Colorado Springs.

ILLINOIS

District One

R. N. MacBain, Chicago, spoke on "Education in a Modern Osteopathic College" at the meeting held April 1 at Chicago.

District Five

"The Relation of Metaphysics to Everyday Practice" was the subject of a speech by Captain James O'Donovan, Urbana, at the meeting at Urbana February 29.

The officers are: President, John Cunningham, Tuscola; vice president, Harold Hinds, Monticello; secretary-treasurer, Hugh Sluder, Champaign.

H. F. Garfield, Danville, is trustee.

District Eight

The officers are: President, J. E. Schuman, Centralia; vice president, Paul E. Sutton, Olney; secretary-treasurer, J. G. Switzer, Vandalia (re-elected).

INDIANA

State Society

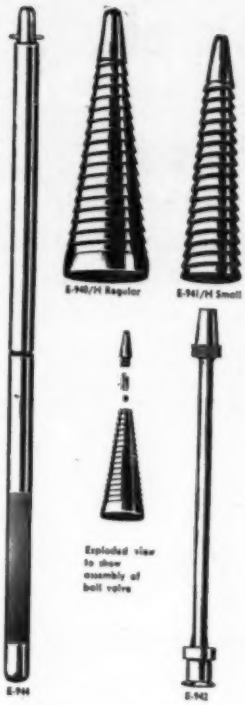
It has been announced that H. Ward Ferrill, Ph.D., professor of physiology and pharmacology at Chicago College of Osteopathy, will conduct the refresher courses scheduled to be held April 17, 18; May 8, 9; May 22, 23; and June 5, 6.

IOWA

State Society

The program announced in advance for the annual meeting at Des Moines, May 17, 18 is to include the following: "Relationship Between Low-Back Problems and Rectal Pathology," "Structural Diagnosis," "Systematic Effect of a Specific Lesion," and "Arthritides,"

Now! sizes for the *Nullipara* and the *Multipara*



The HUDGINS CANNULA

(R) 2372045

For Hysterosalpingography

FEATURES IN DIAGNOSIS

- √ Provides a *simplified technic* which can be done in the physician's office with a saving in time and effort.
- √ *Less pain and trauma*—no tenacula required.
- √ *Single plate* technic completed in 1 to 2 hours.
- √ *Functional obstructions* of tubes (spasms and mucous plugs) *fewer* and more easily overcome.
- √ *Clearer films*—fewer instrument shadows.
- √ *Early spill of media*—with instrument in place—better orientation. Permits use of *lighter opaque media base*—more easily absorbable.
- √ *Safe*—little danger of serious trauma. Keeps operator out of X-Ray field.

FEATURES IN THERAPY

- √ *More effective* (prolonged, sustained, gentle, rhythmic pressure by uterine contractions). *Cannula can be retained 24 hours or longer.*
- √ *More easily accomplished, less painful,* and *adaptable to repeated treatments.*
- √ *Spasms and mucous plugs more easily overcome.*
- √ *Uterine-tubular pressure more effective than surgery.*

THE Hudgins Cervical Cannula is screw-type, self-retaining, indwelling, with a ball valve to retain the contrast media. It is now available with two sizes of conical cannula head: small for the nullipara; and large for the multipara. The head has a luer slip opening which accommodates a metal introducing stem with luer taper tip and cross bar. The introducing stem is easily removed and a hollow syringe stem fits in its place. A syringe is then attached, the contrast media introduced, and the syringe stem removed. The patient is then instructed to be up and about for about 30 minutes after which the plate is taken. The interval allows the medium to be worked out into the tubes by the muscular contractions of the uterus.

E-940 Hudgins Cannula Outfit (stainless steel) complete with regular conical cannula head (E-940/H) for the multipara, syringe stem (E-942), introducing stem (E-944), and an extra valve ball and spring, with comprehensive directions for use, **each $15.00**

E-941 As above but with **small conical cannula head** (E-941/H) for the **nullipara, each..... $15.00**

ORDER NOW from Your SURGICAL SUPPLY DEALER

CLAY-ADAMS CO INC.

44 EAST 23rd STREET, NEW YORK 10, N. Y.

Wallace M. Pearson, Kirksville, Mo.; "Control of Undulant Fever in Iowa," Carl F. Jordan, M.D., Iowa State Department of Health; "Athletic Injuries," M. D. Cramer; "Cystitis," K. B. Riggle, both of Des Moines; "Proctological Problems," Holcomb Jordan, Davenport.

District Four

A meeting was held at Mason City March 31.

KANSAS

Eastern

The officers are: President, David L. Young, Ottawa; secretary, T. O. Osborn, Colony.

Mid-Kansas

The officers are: President, Frank E. Loose, Newton; secretary, H. B. Syler, Nickerson.

North Central

The officers are: President, E. W. Eustace, Tescott; secretary, C. W. McClaskey, Cuba.

Northeastern

The officers are: President, F. H. Kendall, Holton; secretary, Ann Weigers, Marysville.

Wyandotte

The officers are: President, V. H. Zima, Bethel; secretary, H. W. Bain, Kansas City.

for simple diagnosis of . . .

URINE-SUGAR

CLINITEST
TABLET NO-HEATING METHOD

SIMPLE AND SPEEDY—
Drop one Clinitest Tablet in indicated amount of diluted urine—watch for reaction—compare with color scale.

OCCULT BLOOD

HEMATEST
TABLET METHOD

SIMPLE TECHNIC—
Place one drop of specimen solution or suspension on filter paper. Set Hematest Tablet in center of moist area and allow 2 drops water to trickle down from top of tablet to paper. Color reaction on paper denotes presence of blood.

Full information on request.

AMES COMPANY, INC., ELKHART, INDIANA

MASSACHUSETTS

Connecticut Valley

A movie on "Effects of Osteopathic Lesions," and speeches by H. M. Scovill, M.D., on office laboratory technics and their interpretations, and George S. Reynolds, M.D., F.A.C.S., on early symptoms and diagnosis of cancer of the breast, were scheduled to be given at the meeting at Pittsfield April 14.

The officers are: President, Bertha L. Miller, Springfield; vice president, Anne M. Fielding, Greenfield; secertary-treasurer, Charles W. Wood, Holyoke. All were re-elected.

Phillip S. Taylor, Springfield, LaRue H. Kemper, and George A. Haswell, both of Northampton, are trustees.

The committee chairmen are: Professional development, Paul M. Brose, Holyoke; program, Ward C. Bryant, Greenfield; legislation, Dr. Taylor; insurance and professional education, Alexander Russell, Springfield; public relations, Dr. A. Haswell.

Essex County

"Crime and Fingerprinting" was to be presented by Police Officers Arthur Witham and Earle Donovan, both of Lynn, at the meeting held March 8 at Lynn.

Norfolk County

The officers are: President and trustee, Earl C. Stevenson, Quincy; secretary-treasurer, Irving M. Parker, Mansfield. Both were re-elected.

MICHIGAN

Central

The officers are: President, C. B. Root, Greenville; vice president, W. Guinand, Riverdale; secretary-treasurer, LeRoy Jagnow, Sheridan. All were re-elected.

The committee chairmen are: Ethics, G. W. Stevens, Big Rapids; hospitals, Emmett Binkert, Carson City; clinics, Dr. Jagnow; statistics, L. D. Benedict, Ionia; district program, Dr. Guinand; legislation, A. C. German, Lyons; vocational guidance, E. R. Remsberg, Alma; public health, Harold Seelye, Stanton; industrial and institutional service, W. R. Price, Belding, public relations, R. E. Benson, St. Johns.

East Central

At the meeting at Flint March 10, Earl Congdon, Lapeer, spoke on "Modern Concepts of Treatment of Congestive Heart Failure."

Eastern

The officers were reported in the February JOURNAL.

A. F. Finzel, St. Clair, and R. W. Campbell, Algonac, are trustees.

The officers are: Membership, Dexter Rice; ethics and legislation, H. W. Laidlaw, both of Bad Axe; hospitals, C. C. Hazen, Sandusky; clinics, D. D. Walker; statistics, G. A. Noble, both of Port Huron; convention program and arrangements and public health and public relations, L. Cobb, Marine City; vocational guidance, R. S. Young, Harbor Beach.

Kent

C. C. Slemons, M.D., City Health Commissioner, Grand Rapids, spoke on public health, Claude Root, Greenville, spoke on legislature problems, and William A. Ellis, Grand Rapids, spoke on association problems at the meeting held March 19 at Grand Rapids.

The officers were reported in the March JOURNAL.

The committee chairmen are: Membership and ethics, L. M. Monger, clinics, W. E. McLravy; legislation, W. A. Ellis; vocational guidance, R. G. Bubeck; public health, J. V. Porcelli, public relations, Owen A. Rice; insurance, I. L. Taylor, all of Grand Rapids.

Saginaw Valley

John Cowan, M.D., Director, Venereal Disease Control Division, Michigan Health Department, C. I. Brooker, Plymouth, and J. D. Stover, Detroit, spoke at the meeting held at Midland March 11.

The officers were reported in the February JOURNAL.

The committee chairmen are: Membership, Bruce Hayden; ethics, William Pettycrew; hospitals, A. E. Ferris; industrial and institutional service, C. S. Chickey; public relations, E. A. Ward, all of Saginaw; statistics, H. R. Schmitt; convention arrangements, G. W. Stewart; legislation, H. C. Moore; public health, Donald Chute, all of Bay City; clinics, A. E. Rottermund, Wheeler; convention program, A. Speir, Merrill; vocational guidance, R. J. Harvey, Midland.

MISSOURI

State Association

The program for the Springfield Refresher Course, March 14, 15, included the following: "Chest Problems and the Radiograph," "Obstetrical Pelvimetry," and "Genitourinary Problems in X-Ray Studies," C. A. Tedrick, Denver; "Osteopathic Technic," A. R. Schultz, Fordland; "Osteopathic Care of Poliomyelitis" and "Low-Back Problems," L. C. Nagel; "Diagnosis of Cardiac Patients" and "Treatment of Cardiac Patients," Jacob Rosen; "Hospital Procedures," K. J. Davis, all of Kansas City.

The program announced in advance for the St. Louis Clinicodiagnostic Conference, April 6-8, included the following: "Short-Leg Problem," Richard B. Gordon, Madison, Wis.; "Cardiac Emergencies in General Practice," F. V. Hetzler, Kirksville; "Glandular Disease of Children," Quintos W. Wilson, Kansas City. The clinic presentations were to be conducted as follows: Osteopathy section, Dr. Gordon; cardiology section, Dr. Hetzler; endocrinology section, Dr. Wilson.

Speeches were to be presented also by G. S. Wetzel, Clinton; J. R. Dougherty, Vandalia; Judge Roy D. Williams, Boonville; Mr. Lawrence D. Jones, executive secretary, Jefferson City.

It has been announced that the annual clinical review course will be held at Kirksville June 13-15.

Northeast

Mr. "Buck" Robinson, Edina, spoke on Alaska at the meeting held at Edina March 18.

West Central

G. S. Wetzel, Clinton, David A. Squires, Fulton, and Mr. Harry Farrar, director of public relations of the Missouri association, were speakers at the meeting held at Sedalia March 21.

NEW MEXICO

Central

At the meeting held March 18 at Albuquerque, George C. Widney, Jr., Albuquerque, spoke on urological problems.

NEW YORK

State Society

The Third Annual District Officers' Conference was scheduled to be held March 6, 7 at Albany. It was announced in advance that the program was to include the following: "Public Education on Health Program of the A.O.A." and "Public Health Activities," Francis J. Beall, Jr., Syracuse; "State and National Affairs As They Affect the Profession" and "Requirements for Establishment of Clinics and Hospitals," R. E. Cole, Geneva; "The Society's Student Loan Fund," Bruce C. Tompkins, Ithaca; "What Districts Need From the State Society," Thomas A. Fleming, Amityville, L. I., and Frederick E. Wicks, Huntington, L. I.; "Progress in Osteopathic Education," R. McFarlane Tilley, Brooklyn; "The Philadelphia College," Mr. George E. Letchworth, Jr., Philadelphia; "The Osteopathic Progress Fund," John R. Pike, Albany; "Vocational Guidance in New York," Clarence E. Long, Jr., Buffalo; "New York Osteopathic Hospital" and "Golden Anniversary Convention," Omar C. Latimer, New York City; "Federal and State Health Insurance Plans" and "The State Labor Department," Albert W. Bailey, Schenectady; "1948 State Legislation," M. C. Vaughan, Rochester; "Public Relations, Press and Radio, in the State and District Societies," Wesley C. Luther, Hamburg; "Report of the A.O.A. Public Relations Bureau," W. S. Prescott, Syracuse; "The Board of Medical Examiners," Donald B. Thorburn; "Ethics and Censorship," William O. Kingsbury, both of New York City.

Central

Patrick H. O'Hara and Fred I. Gruman, both of Syracuse, discussed pathological conditions of the rectum at the meeting at Syracuse March 11.

Hudson River North

The officers are: President, Philip Greene; vice president, Lawrence Hall, both of Schenectady; secretary-treasurer, Samuel H. Scott, Albany (re-elected).

Long Island

The officers are: President, E. S. Smith, Bayport (re-elected); vice president, T. A. Fleming, Amityville; secretary, O. deF. Seibert, Baldwin (re-elected); treasurer, R. S. Wells, Manhasset.

The committee chairmen are: Membership, G. S. Maxwell, Bay Shore;

more POPULAR than ever

THE Efficiency FILE

The doctors' favorite file just as it was before the war

It hasn't been changed because we couldn't make it better. It is far and away the finest and most efficient of doctors' files. It takes care of ALL of a doctors' records EFFICIENTLY AND ECONOMICALLY. It's an impressive piece of furniture, 18⅛" wide, 16" deep and 40" high, made of heavy-gauge steel with brass-plated hardware, a real paracentric key lock and an olive-green baked enamel finish.

EFFICIENCY WITH ECONOMY

The price is practically no more than in 1942! It's worth double. Because it lasts 25 or 50 years it costs but a dollar or two for every year that you own it.

ONLY $58.75 DELIVERED

Each one of the top four drawers will hold more than 1000 4" x 6" or 5" x 8" Record Forms. The big center file drawer takes thousands of letter or legal size papers. The locked compartment will hold dozens of books, important records, valuables etc.

ALL STEEL

the only file that takes care of ALL OF A DOCTOR'S RECORDS

WALNUT, OR MAHOGANY FINISHES

The Efficiency File is also available in limited quantities in beautiful grained walnut or grained mahogany finishes at $71.25

SEE IT AND ORDER IT AT YOUR LOCAL SUPPLY HOUSE OR ORDER IT DIRECT FROM US BY USING THIS COUPON

PROFESSIONAL SALES COMPANY, INC.
15 East 22nd Street, New York 10, N. Y.
Gentlemen: Send me the Efficiency File.
___Olive Green, at $58.75.
___Walnut, ___Mahogany, at $71.25.
___Enclosed is remittance.
___Send C. O. D. plus collection charges.
Name_____
Address_____

AS HANDSOME AS IT IS SERVICEABLE

Distinctly Individual
B-P
SURGICAL KNIFE HANDLES
Outstanding for their durable fabrication and capacity to accurately and firmly fit every B-P Blade, their combined qualities of practical design, balance and finish are as distinctly individual as a fingerprint.
Genuine B-P Handles may be readily distinguished by the Gothic Arch pattern of the distal ends . . . a time-conserving aid in blunt dissection. As quality products, they are built for long periods of satisfactory service . . . designed to resist the damaging effects of hard, constant use. In the end, more economical by far.
AVAILABLE PATTERNS INCLUDE—
Nos. 3, 4 and 7.....For general surgical use.
Nos. 3L and 4L.....Elongated handles for deep surgery.
No. 3LA .....An offset, elongated handle for use in hysterectomies.
No. 9.....A small, finely balanced handle for ophthalmic, plastic and minor surgical use.
Ask your dealer
BARD-PARKER COMPANY, INC.
Danbury, Connecticut
B-P
A BARD-PARKER PRODUCT

ethics and public relations, Dr. Seibert; hospitals and clinics, W. J. E. Tucker, Port Washington; legislation, Elizabeth S. Carlin, Hempstead; vocational guidance, Dr. Smith; public health, R. M. Jameson, Great Neck; state and social medicine, F. E. Wicks, Huntington.

OHIO

State Society

It has been announced in advance that the program for the annual meeting at Columbus May 9-11 is to include the following: "The Osteopathic Lesion" and "War Experiences on Cellular Physiology," Irvin M. Korr, Ph.D., Kirksville, Mo.; "Effect of Lumbosacroiliac Lesion" and "Goiter and Its Symptoms from Bedside Diagnosis," George J. Conley, Kansas City, Mo.; "Liver Function in Systemic Disease," and "Review of Recent Developments in the Management of Anemias," Ralph Lindberg, Detroit, Mich.; "Low-Back Problems with X-Ray Interpretation," Wallace Pearson, Kirksville, Mo.; "Osteopathic Education" and "Certain Mechanisms of Sudden Unexpected Death," Otterbein Dressler; "Indications for Cranial Therapy in the Newborn for the General Practitioner" and "Diagnosis and Treatment of Common Contagious Diseases of Childhood," Ruth Tinley, both of Philadelphia.

Thirteenth District Academy

J. Milton Zimmerman, Dayton, was to speak at the meeting held March 4 at Columbus.

OREGON

Southern

Bertha Sawyer, Ashland, reviewed the book, "Wheel of Health," and spoke on diet and health at the meeting at Ashland March 2.

Willamette Valley

Films on the function of the kidney and gastrointestinal tract were shown at the meeting at Albany March 11.

RHODE ISLAND

State Society

Gertrude L. Muller, M.D., Providence, spoke on child psychiatry at the meeting held at Providence March 11.

Maurice Cooper, M.D., Regional Director of the Boston VA Office, was to speak on "VA Policies, and Administration and Participation of Osteopathic Physicians" at the meeting scheduled to be held April 8 at Providence.

TEXAS

State Society

It was announced in advance that the program for the annual meeting at Houston April 15-17 was to include the following: Robert P. Morhardt, Los Angeles, was to speak on the mechanisms, causes, and progress of common lung diseases and illustrate with color projections the gross morbid anatomical changes characterizing them; Lawrence Houts, Long Beach, Calif., was to review recent developments in otorhinolaryngology, new methods of sight saving, relief for otosclerosis and hearing disturbances, and voice boxes in laryngeal diseases; Emmett Binkert, Carson City, Mich., was to discuss the diagnosis of cervical and vaginal pathologies, diagnosis of common surgical conditions of the abdomen, and the responsibilities of the general practitioner to the specialist; J. S. Denslow, Kirksville, Mo., was to present papers on practical application of the studies of the spinal reflex arc, soft tissue changes in areas of osteopathic lesions, and management of difficult problems in osteopathic practice.

Dallas County

Reginald Platt, Houston, spoke on "Cranial Osteopathy" at the meeting at Dallas March 11.

Panhandle

The officers are: President, W. R. Ballard, Pampa; vice president, D. Hackley, Dumas; secretary-treasurer, R. L. Vick, Tulia.

WASHINGTON

King County

The officers are: President, Eugene E. LaCroix; vice president, Gordon W. Brusso, both re-elected; secretary-treasurer, Scott B. Wisner, all of Seattle.

The committee chairmen are: Membership, C. W. Roehr; ethics, L. L. Herr; hospitals and clinics, John Thorp; vocational guidance, George Lewis; industrial and institutional service, Joseph Aiken, all of Seattle.

WEST VIRGINIA

State Society

The program for the annual meeting to be held at Wheeling May 30-June 1 is to include a speech by Robert Thomas, Huntington.

Parkersburg District

The officers are: President, J. E. Bartram, Glenville; vice president, R. H.

DeWitt, Parkersburg; secretary-treasurer, John Halley, New Martinsville.

The committee chairmen are: Radio, Rolla J. Morey; program, William McLaughlin, both of Parkersburg.

WISCONSIN

State Society

It has been announced in advance that the program for the annual meeting May 5-7 at Milwaukee is to include speeches by Edwin F. Peters, Ph.D., Byron E. Laycock, both of Des Moines, Iowa; and Kenneth L. Dirlan, Massena, Iowa.

Madison

A film on "The Role of Gastroscopy in Diagnosis and Treatment" was shown by Dr. Hardt of Harrow Laboratory, Inc., at the meeting at Madison March 11.

CANADA

British Columbia

The officers are: President, M. P. Thorpe, Vancouver; vice president, V. B. Taylor, Victoria; secretary-treasurer, W. C. Atkinson, Vancouver. All were re-elected.

SPECIAL AND SPECIALTY GROUPS

EASTERN OSTEOPATHIC ASSOCIATION CONVENTION

The program for the annual meeting held at New York April 3, 4 included the following: "Athletic Injuries—Head and Trunk," and "Athletic Injuries—Arm and Leg," A. E. Allen, Minneapolis; "Osteopathic Management of Osteoarthritis (Hypertrophic)" and "Osteopathy in Neuroendocrine Disorders," H. L. Samblanet, Canton, Ohio; "The Nature of Disease" and "Biophysics in Its Practical Application for the Osteopathic Physician," R. T. Lustig, Grand Rapids, Mich.; "The Diagnostic Importance of Lesions in the Upper Gastrointestinal Tract," A. M. Flack, Jr., Philadelphia; "History of Osteopathy," C. D. Swope, Washington, D.C.; "Psychosomatic Medicine," A. E. Wilkinson, Montreal, Quebec; "Psychology and Technic of General Practice," H. S. Liebert, Richmond, Va.; "The President of the A.O.A. Reports" and "The Atlanto-Occipital Lesion," Robert B. Thomas, Huntington, W. Va.; "Indications and Interpretations of Common Laboratory Procedures," B. B. Button, Philadelphia.

ILLINOIS OSTEOPATHIC SOCIETY OF RADIOLOGY

It was announced in advance that the program for the meeting scheduled to be held at Joliet, April 22 was to include speeches on "Some Diseases of the Head and Neck as Revealed by X-Ray," "Gallbladder Pathologies," and "Diagnosis of Diseases of the Chest," by Byron L. Cash, Des Moines, Iowa.

State and National Boards

ALASKA

Anyone desiring to take basic science examinations should address the secretary of the Basic Science Board of Examiners, C. Earl Albracht, M.D., Juneau.

Strictly Paradise for "NO"-Men

—or why you can count on safer

Cutter Saftiflask Solutions

You've heard about Hollywood and its "yes"-men—but have you ever heard about the mecca for "no"-men?

It's Cutter's testing department—where Saftiflask Solutions are put through purges that make the Gestapo look sissy!

So tough, in fact, are Cutter testing technicians that they put solutions to the same meticulous tests they use on delicate vaccines and serums—figuring, no doubt, that any material designed for *mass* intravenous injection should be equally dependable.

This ivory tower attitude is not aimed at pleasing Cutter production men—who not so fondly refer to the testers as "stinkers." But it does pay off in safer solutions for *you*.

Add to such assurance the smooth performance of Saftiflask equipment—and you'll see why so many doctors and hospitals specify Cutter Solutions in Saftiflasks. You'll surely find it worth your while, too.

CUTTER LABORATORIES

BERKELEY 1, CALIFORNIA

ARIZONA

Basic science examinations June 15. Address Francis A. Roy, secretary, Basic Science Board, University of Arizona, Tucson.

CALIFORNIA

Examinations June 3-5. Address Glen D. Cayler, D.O., secretary, Board of Osteopathic Examiners, 3440 W. 18th St., Los Angeles.

COLORADO

Basic science examinations June 2, 3. Applications must be on file prior to May 19. Address Esther B. Starks, D.O., secretary, Basic Science Board, 1459 Ogden St., Denver 3.

Professional examinations in July. Address C. Robert Starks, D.O., president, State Board of Medical Examiners, 1459 Ogden St., Denver 3.

CONNECTICUT

Basic science examinations in June. Applications must be on file 2 weeks prior to the examination. Address Mr. M. G. Reynolds, executive assistant, State Board of Healing Arts, 250 Church St., New Haven 10.

Professional examinations July 13. Address Robert Nicholl, D.O., secretary, Board of Osteopathic Examination and Registration, 5 Field Pt. Rd., Greenwich.

DELAWARE

Examinations July 13, 14. Address Joseph S. McDaniel, M.D., secretary, State Board of Medical Examiners, 229 S. State St., Dover.

FLORIDA

Basic science examinations June 5. Applications must be on file prior to May 23. Address M. W. Emmel, D.V.M.,

The New Oral Method

of Penicillin Administration

to Infants and Children

Soluble Tablets Crystalline Penicillin provide a new and convenient means of instituting penicillin therapy in infants and young children. These small tablets of crystalline penicillin G potassium are composed entirely of penicillin, and contain neither binder nor excipient. Readily soluble, they may be administered with the milk formula to infants, or dissolved in milk or water before being given to young children. Thus the need for hypodermic injection is obviated in the treatment of many penicillin-responsive infections and administration can be made by the mother. Their presence in solution produces no discernible alteration in taste. Dosage, 100,000 units or more every 3 to 4 hours.

Each Soluble Tablet Crystalline Penicillin contains 50,000 units and is individually sealed in aluminum foil. Supplied in boxes of 24 tablets and available at all pharmacies.

C.S.C. Pharmaceuticals

A DIVISION OF COMMERCIAL SOLVENTS CORPORATION
17 E. 42nd ST., NEW YORK 17, N. Y.

secretary, State Board of Examiners in the Basic Sciences, University of Florida, Gainesville.

Professional examinations June 26, 27 at St. Petersburg. Applications must be filed 2 weeks prior to examination. Address Richard S. Berry, D.O., secretary, State Board of Osteopathic Medical Examiners. 617-18 Times Bldg., St. Petersburg, 5.

GEORGIA

Examinations July 6. Address Russell E. Andrews, D.O., secretary, State Board of Osteopathic Examiners, 304 First National Bank Bldg., Rome.

HAWAII

Examinations July 14. Address Mabel A. Runyan, D.O., secretary, Board of Osteopathic Examiners, 2333 C. Kalakaua Ave., Honolulu 30.

IDAHO

Examinations in June. Address Estella S. Mulliner, Director, Bureau of Occupational License, Department of Law Enforcement, Boise.

ILLINOIS

Examinations June 22-24. Address the osteopathic examiner, Oliver C. Foreman, D.O., 58 E. Washington St., Chicago.

INDIANA

Examinations June 15-17. Address Paul R. Tindall, M.D., secretary, State Board of Medical Registration and Examination, 20 N. Pike St., Shelbyville.

KANSAS

Examinations June 17-19 at Topeka. Applications must be on file 30 days prior to date of examination. Address Forrest H. Kendall, D.O., secretary, State Board of Osteopathic Examination and Registration, 420½ Penn, Holton.

KENTUCKY

Examinations June 16-18 at Henry Clay Hotel Louisville. Address P. E. Blackerby, M.D., secretary, State Board of Health, 620 S. Third St., Louisville.

MAINE

Examinations June 8, 9 at Augusta. Address Albert E. Chittenden, D.O., secretary, Board of Osteopathic Examination and Registration, 50 Goff St., Auburn.

MARYLAND

Examinations in June. Address Walter H. Waugaman, D.O., secretary, State Board of Osteopathic Examiners, 33 S. Centre St., Cumberland.

MASSACHUSETTS

Examinations July 13. Applications must be on file 2 weeks prior to date of examination. Address H. Quimby Gallupe, M.D., secretary, Board of Registration in Medicine, State House, Boston 33.

MICHIGAN

Examinations June 29-July 1 at the office of the secretary. Applications must be filed by June 15. Address Harry F. Schaffer, D.O., secretary, Board of Osteopathic Registration and Examination, 1375 Penobscot Bldg., Detroit 26.

MINNESOTA

Basic science examinations June 1, 2. Address Raymond Bieter, M.D., secretary, State Board of Examiners in the Basic Sciences, 126 Millard Hall, University of Minnesota, Minneapolis 14.

MISSISSIPPI

Examinations June 28, 29 at Jackson. Applications must be filed 10 days prior to examination. Address Felix J. Underwood, M.D., secretary, State Board of Health, Jackson.

MISSOURI

Examinations June 7-9 at Kirksville. Address F. C. Hopkins, D.O., secretary, State Board of Osteopathic Examination and Registration, 203 S. Sixth St., Hannibal.

NEVADA

Examinations in July. Address Walter J. Walker, D.O., secretary, Board of Osteopathic Examiners, 15 Saviers Bldg., Reno.

NEW JERSEY

Examinations June 15. Address E. S. Hallinger, M.D., secretary, Board of Medical Examiners, 28 W. State St., Trenton.

NEW MEXICO

Examinations May 27-29 at Raton. Address H. E. Donovan, D.O., secretary, Board of Osteopathic Examination and Registration, Donovan Osteopathic Clinic and Hospital, Raton.

NEW YORK

Examinations June 28-July 1 at New York and Albany. The first part of examinations (anatomy, physiology, chemistry and bacteriology) may be taken by students at the end of the sophomore year. Address Mr. Horace L. Field, Chief, Bureau of Qualifying Certificates and Professional Examinations, Albany.

NORTH CAROLINA

Examinations in July. Address Frank R. Heine, D.O., secretary, State Board of Osteopathic Examination and Registration, 910 Southeastern Bldg., Greensboro.

NORTH DAKOTA

Examinations in July. Address M. M. Kemble, D.O., secretary, State Board of Osteopathic Examiners, 6-10 Kresge Block, Minot.

OHIO

Examinations June 21-24 at Columbus. Address H. M. Platter, M.D., secretary, State Medical Board, Wyandotte Bldg., Columbus 15.

OKLAHOMA

Examinations June 1 at Oklahoma City. Address Kendall Rogers, D.O., secretary, Board of Osteopathy, 804 First National Bldg., Oklahoma City.

OREGON

Basic science examinations June 19 at Portland. Applications must be filed before June 2. Address Charles D. Byrne, secretary, State Board of Higher Education, Eugene.

Professional examinations in July. Address Lorienne M. Conlee, Executive Secretary, Board of Medical Examiners, 608 Failing Bldg., Portland.

PENNSYLVANIA

Examinations June 21-23 at Philadelphia. Applications must be on file 2 weeks prior to examination. Address Mrs. Sara H. Longstaff, secretary, Bureau of Professional Licensing, Harrisburg.

RHODE ISLAND

Examinations in July. Address Mr. Thomas B. Casey, Administrator of Professional Regulations, State Office Bldg., Providence.

SOUTH CAROLINA

Examinations June 15, 16. Address M. V. Huggins, D.O., secretary, State Board of Osteopathic Examiners, 208 Carolina Life Bldg., Columbia 56.

SOUTH DAKOTA

Basic science examinations June 4, 5 at Vermillion. Address G. M. Evans, Ph.D., secretary, Board of Examiners in Basic Sciences, Yankton College, Yankton.

TENNESSEE

Examinations July 5, 6 at Memphis. Address M. E. Coy, D.O., secretary, State Board of Examination and Registration for Osteopathic Physicians, 1226 Highland Ave., Jackson.

TEXAS

Examinations June 16-18 at Waco. Address H. F. Connally, M.D., secretary, State Board of Medical Examiners, Amicable Bldg., Waco.

VIRGINIA

Examinations June 18-19. Address K. D. Graves, M.D., secretary, Board of Medical Examiners, Roanoke.

WASHINGTON

Basic science examinations in July. Address George C. Starlund, acting director, State Department of Licenses, Olympia.

WEST VIRGINIA

Examinations June 16, 17 at the Chancellor Hotel, Parkersburg. Applications must be on file 10 days prior to examination. Address W. H. Carr, D.O., secretary, Board of Osteopathy, 405 Coal and Coke Bldg., Bluefield.

freedom from **VAGINITIS**

simply • quickly *effectively*

Westhiazole Vaginal

single-dose disposable applicators

The "single agent of choice"[1] in all types of vaginitis and cervicitis, WESTHIAZOLE* VAGINAL . . .

SPEEDS RELIEF **from itching, discharge, foul odor, etc., and recovery *within 2 to 7 weeks.***

RAPIDLY ACHIEVES **vaginal acidity and flora hostile to pathogenic organisms.**

INTIMATELY MEDICATES **mucosa by adhesive *solution* in vaginal secretions.**

ARRESTS INFECTION, **assures faster healing by intensive local sulfathiazole concentration.**

SAMPLES? NEW LITERATURE? Send coupon, please

WESTHIAZOLE VAGINAL FORMULA
10% SULFATHIAZOLE, 4% UREA, 3% LACTIC ACID in polyethlyene base. NON-IRRITANT, NON-TOXIC.
***T.M.REG. U.S. PAT. OFF.**
1. Siegler, S.L.: Amer. J. Obstet. & Gyn. 52:1, 1946.

WESTWOOD PHARMACAL CORP.
BUFFALO 13, N. Y.
SUBSIDIARY FOSTER-MILBURN CO.

WESTWOOD PHARMACAL CORP.
468 DEWITT ST., BUFFALO 13, N. Y., Dept. AO

Samples and new literature on Westhiazole Vaginal to

Dr.....

Address.....

.....

WISCONSIN

Basic science examinations June 5 at Plankinton House, Milwaukee. Applications must be filed prior to May 29. Address Professor W. H. Barber, secretary, State Board of Examiners in the Basic Sciences, Ripon College, Ripon.

Professional examinations June 22 at Milwaukee. Address C. A. Dawson, M.D., secretary, State Board of Medical Examiners, River Falls.

WYOMING

Examinations in June. Address G. M. Anderson, M.D., secretary, State Capitol, Cheyenne.

ONTARIO

Examinations in June. Address George A. DeJardine, D.O., secretary, Board of Regents, Drugless Practitioners Act, 57 Bloor St., W., Toronto.

BET-U-LOL

HUXLEY PHARMACEUTICALS
521 FIFTH AVENUE, NEW YORK, N. Y.

The Ethical Topical Anodyne that Controls . . . PAIN *in muscle, nerve and joint inflammations*

CONTAINS CHLORAL HYDRATE • MENTHOL METHYL SALICYLATE

Uninterrupted Fungicidal Action

FOR DERMATOPHYTOSIS

Vodust* Powder during the day.
Vodisan* Solusalve at night.
Continuous and effective treatment maintained over a 24-hour period.

Professional samples will be sent upon request.

Vodust – Vodisan

POWDER **SOLUSALVE**

The extensive usage of Hycloromane† under the most adverse conditions—the battle fronts of World War II—has proven it to be a most effective fungicidal agent.

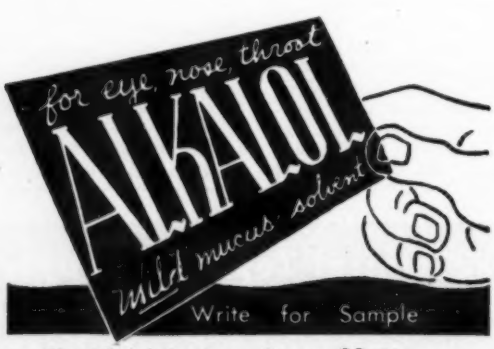
Hycloromane is now available as VODUST (Hycloromane with India talc) for daytime use and VODISAN (Hycloromane in Solusalve) for night-time use in the treatment of athlete's foot and other mycotic infections.

This combined day-night treatment, while exerting a continuous fungistatic and bacteriostatic action, is safe, nonirritating and noninjurious to the skin. Vodust Powder-Vodisan Solusalve is conveniently prescribed for more effective and continuous action against many fungous infections.

†dihydroxydichlorodiphenylmethane.
*Trade Mark Registered.

Vodine Company

407 SOUTH DEARBORN STREET • CHICAGO 5, ILLINOIS



The Alkalol Company, Taunton 23, Mass.

RE-REGISTRATION OF OSTEOPATHIC LICENSES

Before June 30—Delaware, $10.00. Address Joseph S. McDaniel, M.D., secretary, Board of Medical Examiners, 229 S. State St., Dover.

July 1—Idaho, $2.00. Address Miss Estella S. Mulliner, director, Bureau of Occupational License, Dept. of Law Enforcement, Boise.

July 1—Kansas, $5.00. Address Forrest H. Kendall, D.O., secretary, Board of Osteopathic Examination and Registration, 420½ Penn, Holton.

July 1—Michigan, $1.00. Address Harry F. Shaffer, D.O., secretary, Board of Osteopathic Registration and Examination, 1375 Penobscot Bldg., Detroit 26.

July 1—North Dakota, $3.00. Address M. M. Kemble, D.O., secretary, Board of Osteopathic Examiners, 6-10 Kresge Block, Minot.

July 1—Oklahoma, $2.00. Address Kendall Rogers, D.O., secretary, Board of Osteopathy, 804 First National Bank Bldg., Oklahoma City 2.

July 1—Tennessee, $1.00. Address M. E. Coy, D.O., secretary, Board of Examination and Registration for Osteopathic Physicians, 1226 Highland Ave., Jackson.

EXAMINATIONS BY NATIONAL BOARD

The National Board of Examiners for Osteopathic Physicians and Surgeons conducts Parts I and II of its examination on the first Thursday and Friday of each May and December at the six approved colleges. Application blanks may be obtained from the secretary, and the completed application blank, together with a passport photograph and check for the part or parts to be taken, must be in the Secretary's office by the November 15, or April 15, preceding examination. Part III of the examination will be given in specified locations at the discretion of the Board and for the convenience of the applicant.

Examinations in Part I consist of anatomy, physiology, pathology, chemistry, and bacteriology. Part II consists of examination in mental diseases, surgery, obstetrics, and gynecology, pediatrics, public health, osteopathic theory and practice. Part III is an oral examination.

Address John E. Rogers, D.O., Secretary, 16 Mount Vernon Street, Oshkosh, Wisconsin.

EATON ANNOUNCES ASPOGEN

A new gastric antacid—Aspogen—is announced by Eaton Laboratories. Aspogen is the Eaton brand of basic aluminum aminoacetate, the basic aluminum salt of the amino acid glycine. It is intended as an adjunct in the treatment of peptic ulcer and for the symptoms of hyperchlorhydria.

Aspogen has the advantage of both rapid and prolonged neutralization of

gastric hydrochloric acid without producing constipation. The primary rapid action results from a combination of hydrochloric acid with the amino acid fraction of the molecule. The secondary prolonged effect results from the reaction of more acid with the basic aluminum portion of the molecule. These can rapidly raise the reaction of hydrochloric acid toward pH 5. The gastric contents cannot become alkaline with a resulting rebound secretion of acid. No carbon dioxide is released during neutralization of the acid.

Clinical investigation reveals that this material is an effective and palatable method of treatment of peptic ulcer with a minimum amount of untoward side effects. It does not produce flatulence, eructation, or constipation.

Aspogen is supplied in the form of soft palatable tablets of 0.5 Gm. each, sealed in cellophane tape in cartons of 100 and in bottles of 500.

Literature is available from Eaton Laboratories, Norwich, New York.

FEDERAL-STATE-LOCAL RELATIONSHIPS IN THE FINANCING OF LOCAL HEALTH SERVICES[1]

By *Malcolm H. Merrill, M.D., M.P.H.,*

Deputy Director and Chief, Division of Laboratories, California State Department of Public Health

INTRODUCTION

The story of the development of the American democratic system is one of growth of local community government with its various services, followed by association of a group of communities into States, and finally the banding together of States into a nation. In line with this general trend, health services for the most part originated in the local community. As their value was demonstrated, health services of various patterns were established in an increasing number of communities. The result was a most uneven distribution of such services. To obtain more complete service within a community and wider distribution over the area, States began setting up State health programs. The aim was to assure greater protection of health for the people of the State as a whole. In spite of the progress made over the years it is evident today that wide variations in public health services still exist. With full recognition of these inequalities, the Federal Government became interested in aiding the public health program on a Nation-wide basis.

1. Paper presented at the meeting of the Western Branch American Public Health Association, San Francisco, May 28, 1947.

These trends have resulted in the development of a rather complex system of intergovernmental relationships between the local, State, and Federal levels of government. Public Health services themselves are actually rendered in the homes and agencies of local communities under the authority of the local government where well organized, well staffed, well equipped and well operated health units are needed. Efforts of the State and National governments should be aimed principally at facilitating local development. That this fact is appreciated by leaders of the public health movement has been dramatically reemphasized by the recent campaign spearheaded by the American Public Health Association to blanket the nation with efficient local health units.

Our problem is how to guide the development of intergovernmental rela-

TWINS

. . . . alike

yet

different

IODEX (plain)
for
MINOR BURNS, WOUNDS AND ABRASIONS, ENLARGED GLANDS AND MANY SKIN DISORDERS

IODEX c Methyl Sal
for
STRAINS, SPRAINS, MUSCLE AND RHEUMATIC PAINS. RELIEVES ITCHING IN SKIN DISEASES

MENLEY & JAMES, LTD., NEW YORK

BORCHERDT MALT SOUP EXTRACT
EST. 1868

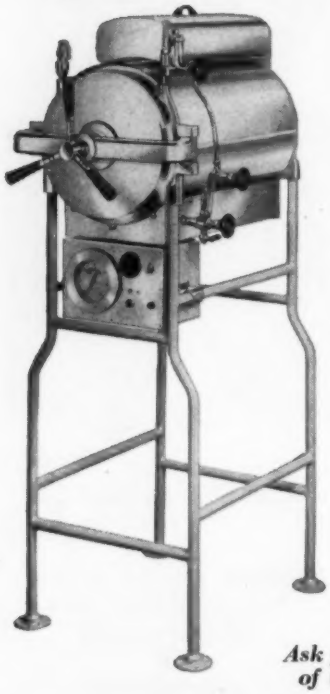
for Constipated Babies

Borcherdt's Malt Soup Extract is a laxative modifier of milk. One or two teaspoonfuls in a single feeding produce a marked change in the stool. Council Accepted. Send for sample.

BORCHERDT MALT EXTRACT COMPANY, 217 N. Wolcott Ave., Chicago 12, Ill.

Self-Contained Autoclave for Clinics and Large Offices

PELTON
presents
NEW MODEL
with
GREATER STERILIZING CAPACITY



HERE is Pelton's newest and largest autoclave . . . the pressure-type sterilizer that brings both hospital safety and greater capacity to clinics and multiple offices.

It is completely self-contained. It generates its own steam . . . provides a temperature in excess of 250° F. Selective temperature control may be set as required for different materials . . . no further attention is required as control is entirely automatic.

The new LV has the exclusive features for which Pelton autoclaves have long been known.

Inside Chamber: 12" x 22"
Over-all: 33" deep, 20" wide, 60" high

Ask your dealer now for details of this new Pelton Sterilizer

PELTON PROFESSIONAL EQUIPMENT SINCE 1900
THE PELTON & CRANE CO., DETROIT 2, MICH.

tionships to promote efficient local health services. The first essential in the achievement of this objective is adequate financing. This has become more and more a shared function of the three levels of government. The Federal Government has initiated a system of grants-in-aid to States. In the utilization of these funds, the States either provide the services directly to the local communities or they establish a second system of grants-in-aid to local governmental agencies.

The following paper presents a history of the development of these intergovernmental relationships. The necessity of financial participation by all three levels of government is indicated. Some possible approaches to the methods of redistribution of Federal and State funds to local health departments is also presented.

WHY A GRANT-IN-AID PROGRAM

The primary purposes in the initiation of a Federal grant-in-aid program were twofold: first, to improve the standard of health service throughout the county, and second, to increase the quantity of service particularly in those areas with limited financial resources. But why are Federal grants-in-aid necessary to accomplish these purposes? The answer lies in the differing sources of public revenue.

The system of taxation in our country has been so developed that the revenue raising power of local governmental units has been markedly restricted. It is limited primarily to the taxation of real and personal property. The State has more latitude while the Federal Government has almost unlimited taxing power. The practical application of this principle is illustrated by the taxes collected in California in 1945 by the three levels of government. Local governments collected about $38 per capita, the State $65 and the Federal Government $403. Federal taxes were four times the State plus local taxes, and more than ten times local taxes alone.

A second reason for a grant-in-aid program is to equalize the public health services throughout the country by a redistribution of wealth. California is said to be a wealthy State. It contributes about 10 percent of the Federal revenue. It has over 7 percent of the Nation's population. Yet it receives less than 4 percent of the money allotted for public health by the Federal agencies. By such a system of grants-in-aid it is possible to secure more even distribution of health services throughout the country by diverting money from the wealthy to the poorer States.

The State and Federal levels of government are tending more and more to subsidize local governmental agencies to assist them in financing various local programs. Examples are: Old age pensions, aid to the blind, indigent relief, subsidies for education, for road construction, for public building programs, and to a more limited extent, for public health. Such a pattern of financial cooperation between the three levels of government is probably a permanent element of our economy. The only alternative would appear to be a fundamental

Sedation and Euphoria for Nervous, Irritable Patients

VALERIANETS-DISPERT®

Each tablet contains Ext. of Valerian 0.05 gm. dispergentized for maximum efficiency. Odorless and tasteless. Non-habituating. ACTION AND USES: A mild central nervous system depressant. For use in emotional upsets, anxiety states, nervous insomnia, the nervous syndrome of the menopause and of arteriosclerotic subjects.
1 or 2 tablets as required or 3 on retiring.
Bottles of 50, 100 & 500.
STANDARD PHARMACEUTICAL CO., INC. 1123 Broadway, New York

change in our tax structure which is not currently contemplated.

HISTORY

Federal-State Relationships.—The idea of Federal grants-in-aid for health purposes was proposed as long ago as 1879 when a bill creating the short-lived National Board of Health was under consideration by Congress.

The United States Public Health Service began the program of assisting States in 1913, when funds were obtained for "Field Investigations of Public Health." This embraced limited field studies on typhoid fever and was followed, in 1916, by congressional appropriations for demonstrations in rural sanitation. In both these instances funds were administered on a project basis and Public Health Service personnel were assigned to States to assist in the projects. The first example of formal allotments to States was in 1918 when $1,000,000 was appropriated by Congress for venereal disease control. Here, for the first time there was an actual transfer of money to the State for public health purposes. This allocation to States was on a basis of the ratio of the population of any given State to the total population of the United States. This appropriation was discontinued after the First World War.

In 1921, Congress passed the Sheppard-Towner Act which appropriated money to the United States Children's Bureau to assist States in the development of maternal and child health services. Again funds were actually transmitted to the States. There was a basic allotment of $5,000 to each State, $5,000 more to each State if matched and the remainder was allotted on a basis of population. Here two factors were used in determining allotment and population. This program continued until 1929.

With the passage of the Social Security Act in 1935, Congress formally embarked upon a program of grants-in-aid to States for public health. The framework of the allotment procedure was provided in the law. In title VI, which has since become Public Law 410, grants were authorized by the United States Public Health Service. The law prescribed that three basic factors should be considered in determining the allocation of these funds, namely, population, financial need, and extent of the health problem. Under title V administered by the United States Children's Bureau, two additional factors were noted in the law, namely a basic allotment to each State and a requirement for special attention to rural areas. The latter was in reality a slight attempt at definition of criteria to be used in determining the extent of the problem. Both agencies provide for special demonstration or study projects. The Children's Bureau places more emphasis on such special projects and upon aid to rural areas than does the Public Health Service.

State-local relationship in California.—While the above Federal-State fiscal relationships have been developing, California, as other States, has been gradually evolving a State-local fiscal pattern. Until 1918, State aid to local jurisdictions was almost exclusively through the provision of direct services. These included primarily epidemiological investigations, laboratory services and services in the field of environmental sanitation. The

Also for Reducing Diets

For the **DIABETIC**

Sugar-Free Ice Cream

Flavorsome! Tastes like ordinary ice cream! Patients can make it at home with CELLU FREEZETTE. Easy to compute in the diet because FREEZETTE adds no food value to the cream or milk with which it is mixed.

Send for the CELLU Catalog of Diet Foods

FREE CATALOG OF DIET FOODS

Dr.....

Address.....

City..... State.....

CELLU LOW CARBOHYDRATE *Dietary Foods*

CHICAGO DIETETIC SUPPLY HOUSE Inc.

WHEN lowered levels of circulating estrogen accompany the symptoms of the menopause, estrogenic therapy with DPS Formula 320 (Total Natural Estrogenic Substance as a ***macro-suspension***) is a true physiologic method of correcting the existing deficiency.

DPS Formula 320, a ***macro-suspension*** of total natural estrogens for intramuscular injection, permits gradual absorption of the estrogenic hormones, thus faithfully simulating the natural release of the sex hormone. By this physiologic approach the patient's readjustment is kept remarkably free of undesirable side effects.

In addition to the relief of menopausal disturbances, DPS Formula 320 is indicated for the management of certain instances of menorrhagia and metrorrhagia and also to be used in conjunction with Progesterone in secondary amenorrhea.

DYNAMIC AND SUSTAINED RESPONSE

Specify

Dartell

DPS FORMULA 320

DARTELL LABORATORIES

1226 So. Flower St., Los Angeles 15, California

Available in 10 cc. sterile vials. Each cc. represents 20,000 I.U. of estrone activity.

one exception was the State subsidy for all resident tuberculosis patients hospitalized at public expense which was begun in 1914.

With the coming of Federal funds for venereal disease control in 1918, a new pattern of State administration of aid to local health departments came into being. The State employed personnel and assigned them to local health departments and clinics. Allocations to local areas were made on a basis of the State's estimates of needs and the willingness of the local communities to participate. This same general plan was later utilized but to a lesser extent, in the administration of the Sheppard-Towner funds appropriated by Congress for maternal and child health. Most of this activity was in rural areas which had no full time health service so the State provided a direct service in this field.

The pattern of assignment of State personnel was resumed when Social Security funds became available in 1936 and continued until the 1945-46 fiscal year when a limited number of health departments entered into contracts with the State and received the subsidy in the form of funds rather than assigned personnel. This procedure was extended during the 1946-47 fiscal year and will be made almost uniformly applicable during the coming year.

There has thus evolved a procedure through which Federal funds may be channeled to local health departments without disrupting the essential independence and responsibility of the local unit. The agreements are surrounded by regulation with adequate safeguards to insure reasonably efficient utilization of such funds by the local health department.

While this administrative procedure for the handling of the funds has been developing, the adoption of some kind of formula for determining how the funds shall be distributed within the State has lagged behind. Heretofore, the estimate by State personnel of the extent of the problem, together with the willingness of the local health department to undertake new activities, has played the predominant part in determining how the funds were allocated. This has resulted in a most uneven distribution of funds by the State to local health departments. During the past 2 years studies have been under way, designed to solve this problem.

Out of these studies has come the realization that Federal funds available, plus local funds now being appropriated, are inadequate to do the job regardless of how the Federal funds are distributed. This inadequacy of funds was the genesis of the legislation introduced into the current session of the California Legislature to provide a State subsidy for local health work.[2] It was concluded that the only way State-wide coverage, with reasonably adequate local health services could be obtained would be by active State, as well as the Federal, participation in the financing of local health programs.

2. This act became effective September 19, 1947. The act and regulations of the State Board of Public Health adopted to administer the act are available upon request.

(*To be continued*)

Urolithia

Urinary Antiseptic

For the Older Patient

In Cystitis—Prostatitis—Urethritis

Urolithia aids voiding of residual urine—keeps urine bacteriostatic against invading organisms. Soothes irritated mucosa. *Send for sample and literature.*

COBBE PHARMACEUTICAL CO., 217 N. Wolcott Ave., Chicago 12, Ill.

APPLICATIONS FOR MEMBERSHIP

California

Wilson, D. Dwane, (Renewal) 3412 W. Magnolia Blvd., Burbank

Kani, Philip M., (Renewal) 117 S. Grevillea Ave., Inglewood

Lee, Etta, (Renewal) 514 11th St., Richmond

Florida

Reay, Mildred, Box 382, Clermont

Harter, B. P., (Renewal) Box 67, Winter Garden

Michigan

Lee, A. H., (Renewal) 111½ S. Front St., Dowagiac

New Jersey

Manchester, F. P., (Renewal) 829 Avenue C., Bayonne

Harley, John W., 872 Bryant St., Rahway

South Dakota

Hoard, T. H., (Renewal) Box 67, Beresford

Washington

Fishleigh, Leila Border, (Renewal) 503 Old Natl. Bank Bldg., Spokane 8

GRADUATES OF DES MOINES STILL COLLEGE OF OSTEOPATHY AND SURGERY

April 9, 1948

Allender, James Wheeler
Blackler, William John
Evans, George Phillips, Jr.
Graham, William Karl
Hughes, Elwyn Arthur
Ivins, Joseph Leonard
Keller, James Sylvester
Reese, William Joe, Jr.
Tate, Marvis Albert
Tente, Fred William, Jr.

CHANGE OF ADDRESS AND NEW LOCATIONS

Aiken, Donald N., KCOS '48; McConnell Hotel Bldg., Kellogg, Idaho.

Anderson, John, from 111 E. Broadway, to 452 Pioneer Drive, Glendale 3, Calif.

Ashmore, Robert E., from Hawarden, Iowa, to 3945 E. University Ave., Des Moines 17, Iowa.

Baird, Glenn A., from 115 S. Sixth St., to 412 N. Second St., Hiawatha, Kans.

Barbaree, Charles P., KCOS '48; 902 Pine St., Texarkana, Texas.

Belden, Larry M., from Albuquerque, N. Mex., to General Delivery, Chandler, Ariz.

Bensen, L. R., from 137 Centre Ave., to 218 Fifth Ave., New Rochelle, N. Y.

Biddlestone, Lyle A., from Columbus, Ohio, to First Natl. Bank Bldg., Latrobe, Pa.

Bragg, Charles H., from Beaumont, Texas, to Box 884, Big Sandy, Texas.

Candella, Anthony J., from Campbell, Ohio, to 508-12 Union Savings & Trust Bldg., Warren, Ohio.

Chemberlen, Carmen H., from Compton, Calif., to 4316 Atlantic Ave., Long Beach 7, Calif.

Cifala, John A., from 3114 Tenth Road, N., to 2778 N. Washington Blvd., Arlington, Va.

Clark, Jennie Ione, from 430 Empire Bldg., to 1645 Jackson St., Denver 6, Colo.

Dearborn, Grant, from 191 Union St., to 126 Hammond St., Bangor, Maine.

Dickson, John C., Jr., from Trenton Clinic, Drawer G, to Trenton Clinic, 2447 W. Jefferson Ave., Trenton, Mich.

Dunning, J. J., from 140 Park Lane, to 3, Upper Wimpole St., London, W. 1, England.

Emmerson, Richard, from 1200 Michigan Theatre Bldg., to 20522 Hanna St., Detroit 3, Mich.

Evans, Eric S., from Los Angeles, Calif., to 31674 Coast Highway, South Laguna, Calif.

Falk, John F., from Granbury, Texas, to Alvarado, Texas.

Faxon, William B., KCOS '48; Donovan Osteopathic Hospital, Raton, N. Mex.

Q. DO YOU KNOW WHAT DERMATOLOGISTS DO *FIRST* IN TREATING ANY INFLAMMATORY CONDITION OF THE SKIN?

A. THEY USE A WET DRESSING...

... and thus are sure to do no harm *eliminating the danger of "overtreatment" dermatitis.*

The wet dressing of choice is DOMEBORO TABS ... a fact substantiated by their widespread acceptance by dermatologists throughout the country and by the hundreds of millions of tablets which have been used with impressive success all over the world by the U.S. Army, Navy, Red Cross, Veteran's Administration, UNRRA and the U.S. Public Health Service.

DOMEBORO TABS can aid you, doctor, in reducing absenteeism by promoting *faster healing* because DOMEBORO solution remains in a state of constant ionization, thus rendering it capable of correcting variations in the pH values of the skin.

AVAILABLE IN THREE CONVENIENT FORMS
TABLETS
POWDER
OINTMENT

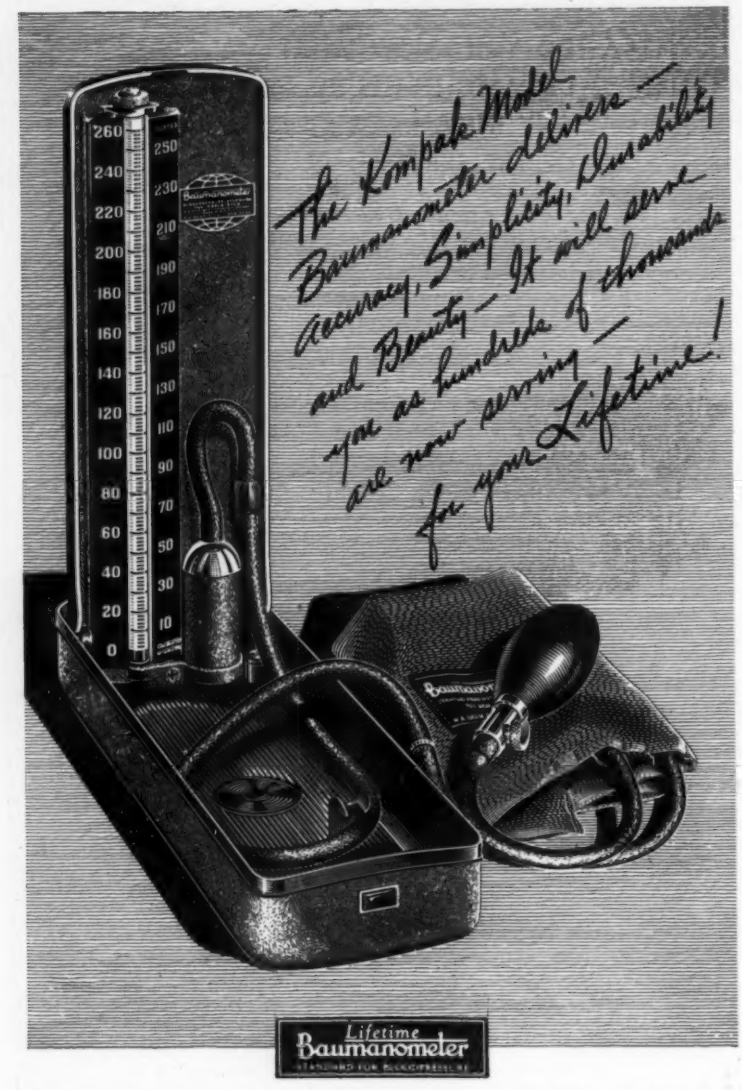
DOMEBORO
is the trademark for the patented, modernized form of basic
ALUMINUM ACETATE
BUROW'S SOLUTION
(1:20)

DOMEBORO TABS are listed on page 378 of the "Manual of Dermatology" issued under the auspices of the National Research Council as "BUROW'S SOLUTION—DOMEBORO TABS"

DOME CHEMICALS, INC.
250 EAST 43RD STREET • NEW YORK 17, N. Y.
Canadian Distributor: F. J. Whitlow & Co., Ltd., Malton, Ontario, Canada
Distributor for California, Arizona and Nevada
Obergfel Bros., 420 S. San Pedro St., Los Angeles

Write for Sample

The Alkalol Company, Taunton 23, Mass.



Ferguson, Travis W., from 1020 W. Central Ave., to 3803 N. Fourth St., Albuquerque, N. Mex.

Ferren, Edwin T., from 2700 Westfield Ave., to 2707 Westfield Ave., Camden, N. J.

Finkelstein, Albert, from 2864 N. 24th St., to 5101 Beverly Road, Brooklyn 3, N. Y.

Forbes, J. Robert, from Council Bluffs, Iowa, to 139 N. Clark St., Chicago 2, Ill.

Friend, Homer C., from 1912 Brady St., to 1910 Brady St., Davenport, Iowa.

Furby, John F., from Webb City, Mo., to Box 214, Dill City, Okla.

Gilbert, Emery J., from 617 Farwell Bldg., to 13622 Gratiot Ave., Detroit 5, Mich.

Godat, Helen Terhuwen, from 430 Third Natl. Bank Bldg., to 305 Fairmont Apts., Nashville, Tenn. (Change of name from Terhuwen.)

Hoersting, Leo H., from 1724 N. Main St., to 1734 Brown St. Dayton 9, Ohio.

Hoersting, Louis J., from 1734 Brown St., to 232 N. Ludlow St., Dayton 2, Ohio.

Holcomb, Grant R. C., from 6401 W. Florissant St., to 8321 N. Broadway, St. Louis 15, Mo.

Hoxsie, Edgar B., from 112 S. Mill St., to 619 Main St., Santa Paula, Calif.

Huneryager, Lloyd W., from Box 247, to 325 McKinley St., Sand Springs, Okla.

Hunt, Eugene S., from 15232 Pacific Hi-Way, S., to 15019 Pacific Hi-Way, S., Seattle 88, Wash.

Jacques, B. Lamar, from Center Point, Texas, to Faust Hotel, Comfort, Texas.

Johnson, Charles E., from Providence, R. I., to Wilton, Maine.

Johnson, Elsa L., from Venice, Calif., to Box 214, Eveleth, Minn.

Kelman, Henry, from Philadelphia, Pa., to Hotel Carteret, 208 W. 23rd St., New York 11, N. Y.

Larus, Norman J., from Montebello, Calif., to 1832 Alpine Drive, San Marino, Calif.

Lofthus, George A., from Bowbells, N. Dak., to Flaxton Hospital, Flaxton, N. Dak.

Lurie, Milton M., from 25 Rose Ave., to 16 Rose Ave., Venice, Calif.

Lyon, Thomas M., from Sacramento, Calif., to 309 Oxford St., North Sacramento 15, Calif.

Machovec, Louis J., from 165 George St., to 2537 Lenox, Trenton, Mich.

Maginnis, Thelma G., from 48 Linden Ave., to 25 Hamilton Ave., Arlington, N. J.

Martin, Harry R., from 924 S. Jackson St., to Oklahoma Osteopathic Hospital, 744 W. Ninth St., Tulsa 5, Okla.

McAtee, Wayne A., from 122 S. Seventh St., to 2903 S. Sixth St., Klamath Falls, Ore.

McGill, Richard O., from 125 W. McDowell Road, to 4820 N. Seventh Ave., Phoenix, Ariz.

McKee, John R., from Rush Springs, Okla., to Belton, Mo.

McKenna, E. H., from Muskegon, Mich., to 139 N. Clark St., Chicago 2, Ill.

Morrill, William J., from 827 First Huntington Natl. Bank Bldg., to 515 Eighth St., Huntington 1, W. Va.

Morris, James I., from Denver, Colo., to V. A. Hospital, Ward 10, Fort Logan, Colo.

Myer, Harry L., from Marietta, Ohio, to 423 Grand Central Ave., Vienna, W. Va.

Mylar, Kenneth R., from Detroit, Mich., to 205 W. Fifth St., East Liverpool, Ohio.

Nafzgar, Robert L., from Los Angeles, Calif., to 112 E. Williams St., Barstow, Calif.

Needham, Paul I., from Butte, Mont., to 512 Bryant Bldg., Kansas City 6, Mo.

Niemann, John A., from General Delivery, to 1445 E. Monte Vista, Phoenix, Ariz.

Parris, Edward B., from South Gate, Calif., to 6422 Whitsett, North Hollywood, Calif.

Peebles, William B., from Los Angeles, Calif., to 12073 Ventura Place, North Hollywood, Calif.

Pool, Mildred R., from Wynne Wood, Okla., to Osteopathic Hospital of Kansas City, 926 E. 11th St., Kansas City 6, Mo.

Pyott, Fowles B., from 1825 E. Las Tunas Drive, to 2413 E. Las Tunas Drive, Temple City, Calif.

Rice, Verne L., from Belfast, Maine, to 701 E. Midland St., Bay City, Mich.

Rogers, H. M., from Peoria, Ill., to Chenoa, Ill.

Russell, Richard E., from Sacramento, Calif., to Waldo General Hosnital. 15th Ave., N. E., and E. 85th St., Seattle 5, Wash.

Salit, Albert E., from Hamlin, Texas, to Box 272, Tombstone, Ariz.

Schneider, Carl G., from Artesia, Colo., to Box 755, Craig, Colo.

Schoenek, Edna M., from Tampa, Fla., to Dade City, Fla.

Schwab, Walford A., from Chicago, Ill., to Namakan Lake, Ont., Canada, P.O., Crane Lake, Minn.

Scott, Harvey S., from Detroit, Mich., to Osteopathic Hospital of Kansas City, 926 E. 11th St., Kansas City 6, Mo.

Seibert, William, from Joplin, Mo., to Emerson Road, Creve Coeur, Mo.

Shade, Harold L., from 215 N. Walnut St., to 1409½ E. Michigan Ave., Lansing 12, Mich.

Shade, Henry G., from West Carrollton, Ohio, to 4000 Fulton Ave., Dayton 9, Ohio.

Shelly, C. Richard, from Waynesville, Mo., to 6109 Natural Bridge Ave., St. Louis 20, Mo.

Smith, George Gail, from Dublin, Texas, to 3041 Cockrell St., Fort Worth 4, Texas.

Smith, Morse E., from 893 E. Main St., to 1958 Cleveland Ave., Columbus 11, Ohio.

Spencer, Leland W., from 427 McIntyre Bldg., to 203 Hooper Bldg., Salt Lake City 1, Utah.

Steffen, Harvey H., from 415 Orpheum Bldg., to 204 Bissantz Bldg., Wichita 2, Kans.

Stratton, Richard L., from 702 N. Terrell, to Main St., Cuero, Texas.

Summers, Chester C., from 4417 Fannin St., to 705 Richmond Ave., Houston 6, Texas.

Thielking, Edmund L., from 401 N. Lea St., to Box 710, Roswell, N. Mex.

Tolaho, Floyd E., from Albuquerque, N. Mex., to Corona, N. Mex.

Vortriede, Charles H., from Westbrook, Maine, to 519 Cumberland Ave., Portland 4, Maine.

Wells-Lee, William, from 1069 S. Garrison Ave., to 831 Prospect Ave., Carthage, Mo.

Wetzel, Leland E., from Kansas City, Mo., to Route 3, Box 135, Springfeld, Mo.

Whim, Sibley L., from Kansas City, Mo., to 5121 Foster, Merriam, Kans.

Widney, George C., from 1020 W. Central Ave., to 3803 N. Fourth St., Albuquerque, N. Mex.

Widney, George C., Jr., from 1020 W. Central Ave., to 3803 N. Fourth St., Albuquerque N. Mex.

Widney, Roderick K., from 1020 W. Cenrtal Ave., to 3803 N. Fourth St., Albuquerque, N. Mex.

Wilson, Everett E., KC '47; Grandview Hospital, 405 Grand Ave., Dayton 5, Ohio.

Woodhull, John K., from 1020 Isabella Ave., to 300 J Ave., Coronado, Calif.

Woodmansee, James R., from 719 Morgan Bldg., to 824 Morgan Bldg., Portland 5, Ore.

Wright, Ben O. L., from Coalinga, Calif., to 515 Norumbega Drive, Monrovia, Calif.

Wyatt, Joseph H., from 2410 David Stott Bldg., to 1106 Francis Palms Bldg., Detroit 1, Mich.

FILM LIBRARY OF THE AMERICAN OSTEOPATHIC ASSOCIATION

Sponsored by Committee on Professional Visual Education
Ralph W. Rice, Chairman; Hal K. Carter, Wallace P. Muir

All bookings must be made through the office of the American Osteopathic Association, 139 North Clark St., Chicago 2, Ill. Films must be reserved several weeks in advance to avoid conflicting dates and delays in transportation. Catalog will be sent free upon request to members of the profession contemplating the use of the films. All films are 16 mm. silent.

TITLE	PRODUCED BY	AUDIENCE SUITABILITY	NO. OF REELS	TIME TO SHOW	SERVICE FEE
Osteopathic Research — The Atlas Lesion	Drs. Rice, Burns, & Hoffman	Professional	3	50 min.	$3.00
Osteopathic Research — Second Lumbar Lesion	Drs. Rice and Burns	Professional	3	45 min.	$3.00
Osteopathic Mechanics of the Dorsal Area	Dr. Ralph Rice	Professional	2	30 min.	$2.00
Osteopathic Mechanics of the Pelvis	Dr. Ralph Rice	Professional	3	45 min.	$3.00
Osteopathic Mechanics—Anterior Occiput	Drs. Wilson, Rice and Muir	Professional	1	15 min.	$1.00
Osteopathic Mechanics — Fourth on Fifth Lumbar Lesion—A Symposium	Dr. Rice	Professional	1	15 min.	$1.00
Osteopathic Mechanics — The First Thoracic (Symposium)	Dr. Rice	Professional	1	20 min.	$1.00
Osteopathic Mechanics — Left Lateroflexion Lesion of the Fifth on the Sixth Cervical Vertebra	Dr. Ralph Rice	Professional	2	30 min.	$2.00
Osteopathic Mechanics — Right Lateroflexion Lesion of the Fourth on the Fifth Lumbar Vertebra	Dr. Ralph Rice	Professional	3	45 min.	$3.00
Osteopathic Mechanics — Left Anterior Sacral Lesion	Dr. Ralph Rice	Professional	3	45 min.	$3.00
Osteopathic Therapeutics—Psoasitis	Drs. Rice and Fryette	Professional			
Osteopathic Therapeutics — Anterior Poliomyelitis	Drs. Rice and Pritchard	Professional	3	45 min.	$3.00
Osteopathic Therapeutics — The Treatment of Laryngitis	Drs. Riley and Rice	Professional	2	30 min.	$2.00
Athletic Injuries—The Charley Horse and the Sprained Ankle. Professional and Lay Edition. (Specify which)	Drs. Ralph Rice and Wilbur Bohm	Professional	2	30 min.	$2.00
Our American Feet, mechanics of feet, technic of fitting shoes	Dr. Q. L. Drennan	Professional	2	30 min.	$1.50
The Anatomy and Mechanics of the Foot and Leg	Dr. H. E. Clybourne	Professional	1	15 min.	$1.00
Anatomy and Physiology of the Feet	Dr. H. E. Clybourne	Professional	1	15 min.	$1.00
Foot and Ankle Technic	Dr. H. E. Clybourne	Professional	1	15 min.	$1.00
Foot and Fibula Technic	Drs. Clybourne & Stinson	Professional	1	15 min.	$1.00
Hypertrophy of the Prostate	Eastman Kodak	Professional	1	15 min.	$1.00
Standard Obstetrical Routine	The Mennen Co.	Professional	6	80 min.	$3.00
Posture	Eastman Kodak	Either	1	15 min.	$1.00

Other Films Available

Making of an Osteopathic Physician	Dr. E. Wells at Chicago Coll. of Osteopathy	Either	3	45 min.	None

ORDER DIRECT from Chicago College of Osteopathy, 5250 Ellis Ave., Chicago 15, Illinois

Electromyographic Studies	Dr. J. S. Denslow		2	30 min.	$2.00 and Transportation

BOOKINGS from Kirksville College of Osteopathy and Surgery

SEND FOR A PHYSICIAN'S SAMPLE OF OUR
PROTEIN DIGEST No. 26

Sidamine Tablets

the amino acid tablet—uncoated—but carrying 70% protein,
no dextrose or other carbohydrate filler.

In writing for samples, please give your degree

Professional Foods

Cedar Rapids, Iowa

COLCIN PAN-ENZYMES NORMIN

ACTIVE INGREDIENTS
Zinc Chloride - Menthol
Formaldehyde - Saccharine
Oil Cinnamon - Oil Cloves
Alcohol 5%

IN THE SICK ROOM

The thorough cleansing action of Lavoris and its pleasant, refreshing taste are most welcome to the patient.

LAVORIS
MOUTHWASH AND GARGLE
REG. U.S. PAT. OFF.

For Effective Mouth Cleansing

Astringent — Detergent — Deodorant

the NEWMAN Thermo-Flo

Accessories for both vaginal and prostatic treatments are standard equipment. A special mobile stand is available.

Operates on 110-120 Volts, AC or DC current. 3 YEAR GUARANTEE.

an important advance in the treatment of pelvic infections

The Newman Thermo-Flo is specifically designed for the safe and effective application of controlled pelvic heat. Developed by Dr. Louis B. Newman, it is fundamentally different in that heated air, thermostatically controlled, is used to produce an active hyperemia in the pelvic organ with its associated beneficial effects, which enhance nature's healing processes. It has attracted universal attention by the astonishingly gratifying results obtained in clinical work on many thousands of patients. The marked prevalence of pelvic inflammatory conditions with its associated effects renders the Newman Thermo-Flo an indispensable part of the equipment of every doctor and every hospital.

SEND for COMPLETE DATA and CLINICAL REPRINTS

Exclusive Manufacturers

MAJESTIC SURGICAL INSTRUMENT CO.
3816 WEST MONTROSE AVENUE • CHICAGO 18, ILLINOIS

AT HOME OR AWAY SPOT TESTS SIMPLIFY URINALYSIS

NO TEST TUBES • NO MEASURING • NO BOILING

Diabetics welcome "Spot Tests", (ready to use dry reagents), because of the ease and simplicity in using. No test tubes, no boiling, no measuring; just a little powder, a little urine—color reaction occurs at once if sugar or acetone is present.

Galatest *Acetone Test* (DENCO)

FOR DETECTION OF SUGAR IN THE URINE FOR DETECTION OF ACETONE IN THE URINE

SAME SIMPLE TECHNIQUE FOR BOTH

1. A LITTLE POWDER 2. A LITTLE URINE

COLOR REACTION IMMEDIATELY

Accepted for advertising in the Journal of the A.M.A.

Write for descriptive literature

A carrying case containing one vial of Acetone Test (Denco) and one vial of Galatest is now available. This is very convenient for the medical bag or for the diabetic patient. The case also contains a medicine dropper and a Galatest color chart. This handy kit or refills of Acetone Test (Denco) and Galatest are obtainable at all prescription pharmacies and surgical supply houses.

Acetone Test (DENCO)... *Galatest*

THE DENVER CHEMICAL MANUFACTURING COMPANY, INC.
163 Varick St., New York 13, N. Y.

THE MEDICAL POWER
for Peptic Ulcer Therapy

Physicians Everywhere Are Prescribing

CA-MA-SIL

—for—

DUODENAL AND GASTRIC ULCER

Start the patient on 2 level teaspoonfuls in ½ glass of water, preferably warm or hot, both *before* and *after* each meal and at *bedtime*—also between meals if necessary.

Send for Sample

PRESCRIBE it for your PEPTIC ULCER PATIENTS

ELIMINATES BETWEEN MEAL FEEDINGS

Avoids Excessive Use of Milk

Contains No SODA, or Aluminum Hydroxide

Does not Induce ANOREXIA or cause Phosphate or Iron Deficiency

No Alkalosis or Acid Rebound

CA-MA-SIL COMPANY • 700 CATHEDRAL ST., BALTIMORE 1, MARYLAND

Official Automobile Emblem

Now Available

First shipment since pre-war days. Ready for immediate delivery.

Design, consisting of green cross and gold lettering on white background, is executed in best quality baked enamel on a heavy bronze convex shield. Washable and weather-proof.

Fitted with steel bracket for attachment to license plate holder.

Recognized by many local and state police departments.

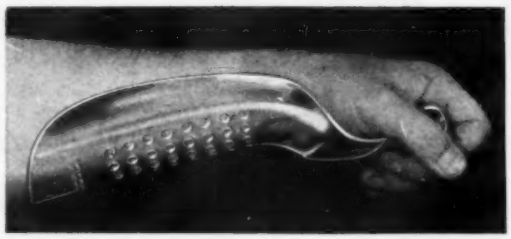
Supplied only to members of the American Osteopathic Association.

Price $1.50, Postpaid

American Osteopathic Association

139 N. Clark Street Chicago 2, Illinois

DePuy AIDS FOR THE OSTEOPATHIC PHYSICIAN



DePuy FORM-FIT COLLES SPLINT

No. 1D. Aluminum, transparent to x-ray, moves perfectly to the arm and wrist in mid-separation and pronation. Perforated for wet dressings and ventilation. Made in right and left, adult, medium adult, child and infant sizes.

★

Your professional card will bring you a DePuy Fracture Catalog.

★

FORRESTER HEAD SLING

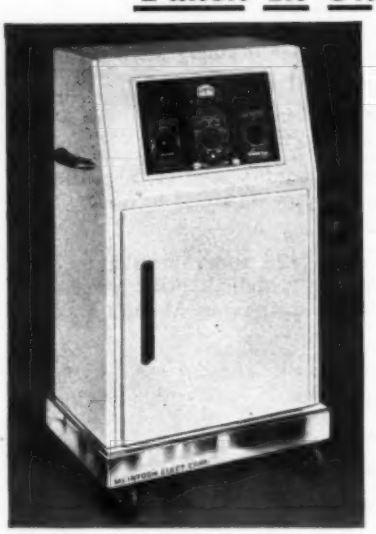
No. 181. An ideal appliance for treating injuries of the spine where counter-extension is indicated. May be used to good advantage where patient is confined to bed. Three sizes—adult, medium adult, and child.

Over 50 Years of Continuous Service to the Professions

DE PUY MANUFACTURING COMPANY
Warsaw, Indiana

A.O.A. 5-48

LOW VOLT EQUIPMENT BARGAINS
Taken In On McIntosh Polysine Generators



McIntosh No. 1521-B Sinustat Only..... **$325.00**

(Order by Number on Coupon)

1. McIntosh No. 1258 Polysine Generator. Next to No. 1410 this is the best Polysine ever made. Has 16 modalities in perfect working order. Original price $575.00. **SOLD $250.00 Cash**
2. McIntosh No. 1158 Polysine Generator. A wonderful apparatus. Thousands in use. Factory overhauled. Has 16 modalities. Original price $525.00. **$195.00**
3. No. 1519 Sinustat. 5 Modalities. In walnut cabinet. Factory overhauled. Only 4 yrs. old. Original price $261.25. **$175.00**
4. Teca galvanic unit No. H.P. 4. Original price $725.00. **$167.00**
5. Rose galvanic sine wave generator. Original price $545.00. **$162.00**
6. Burdick Sine-O-Tron. Original price $330.00. All of the above have floor stand cabinets. Guaranteed in perfect order for 90 days from date of sale. **$147.00**

69th Edition Physical Medicine Catalogue Ready

I enclose check $.....

Please send me Bargain No.....

Name.....

Address.....

City.....

State.....

☐ Send me 69 Ed. Cat.

☐ Info. on #1521-B Ivory Sinustat.

McIntosh Elect. Corp.
229-233 N. Calif. Ave., Chicago, Ill.

"This One Thing We Do"

For nearly forty years D&G has specialized exclusively in the development and manufacture of sutures. As a result the Davis & Geck line is so complete that it includes a suture of known standard and predictable behavior for every surgical need. D&G sutures are obtainable through responsible dealers everywhere.

DAVIS & GECK, INC.

57 WILLOUGHBY STREET • BROOKLYN 1, N. Y.

Mellin's Food—A Milk Modifier

The good results from the use of Mellin's Food over a period of eighty years, unique in the history of infant feeding, is worthy of the careful thought of any physician in the selection of a milk modifier for the preparation of nourishment for babies deprived of breast milk.

Evidence of the effectiveness of Mellin's Food as the modifier is not only apparent during the bottle-feeding period but is observed in later months as the infant becomes a child with an excellent foundation for further rapid growth toward adult life.

Modifications arranged for physicians' use furnish constituents in quantity and of a quality to satisfy the nutritive needs in relation to age and weight, with a supply of liquid to maintain water balance.

If the physician prefers to be the judge of the proportions of milk and water for the individual infant, it is suggested that not less than six level tablespoons of Mellin's Food be used in preparing the full day's feeding mixture. The nutritive value of this quantity of Mellin's Food follows:

Maltose	**24**	**grams**
Dextrins	**8**	**grams**
Proteins	**4.2**	**grams**
Minerals	**1.7**	**grams**

Bowel movements of infants fed on mixtures containing Mellin's Food as the modifier are usually regular with stools of good consistency. Constipation is rare; likewise colic or other digestive disturbances.

Mellin's Food Company, Boston, Mass.

MELLIN'S FOOD: Produced by an infusion of Wheat Flour, Wheat Bran and Malted Barley admixed with Potassium Bicarbonate—consisting essentially of Maltose, Dextrins, Proteins and Mineral Salts.

New Book

Goldberger—Unipolar Lead Electrocardiography

Including Standard Leads, Unipolar Extremity Leads and Multiple Unipolar Precordial Leads

By EMANUEL GOLDBERGER, B.S., M.D.

Adjunct Physician, Montefiore Hospital, New York; Cardiographer and Associate Physician, Lincoln Hospital, New York.

This monograph is the result of extensive study and contains the material used in the course in advanced electrocardiography at Montefiore Hospital, New York. Most texts on electrocardiography describe the three standard leads alone or with one or more precordial leads. In this new and authoritative work, Dr. Goldberger makes a specific point to describe each abnormality in terms of the *three standard leads*, the *three "augmented" unipolar extremity leads* and the *six unipolar precordial leads*. All of these leads are explained in terms of simple fundamental physiological principles and basic unipolar lead patterns.

New Book. 182 Pages. Illustrated. $4.00

New (2nd) Edition

Thienes and Haley Clinical Toxicology

By CLINTON H. THIENES, M.D., Ph.D.
Professor of Pharmacology and Head of the Department of Pharmacology and Toxicology;

and THOMAS J. HALEY, Ph.D.
Fellow in the Department of Pharmacology and Toxicology; School of Medicine, University of Southern California, Los Angeles

For the *new (2nd) edition* of this book, the text has been enlarged and revised and the entire book has been reset and printed from new type. Complete discussions have been included on dicoumarol, heparin, thiouracil, DDT, gold, BAL and streptomycin. The latest uses of proteins, amino acids and vitamins in prevention and treatment of poisoning are detailed. There are full explanations of the many new general methods and apparatus now in use. Changes in terminology have brought the nomenclature in line with the 13th edition of the *United States Pharmacopoeia*, the 8th edition of the *National Formulary* and the 1947 edition of *New and Nonofficial Remedies*.

New (2nd) Edition. 373 Pages. Illustrated. $4.75

Washington Square **LEA & FEBIGER** Philadelphia 6, Pa.

Hospital Lighting for Office and Clinic . . .

AT MODERATE COST

CASTLE No. 46 "ALL-PURPOSE" LIGHT
The No. 46 is designed for examining and operating . . . in offices, clinics and surgeries. Lamphead extends to 75" (above head level), lowers to 48" for compact storage. Internally counterbalanced for simple, quick, vertical adjustment without manual locks or clamps.
Provides soft, cool, color-corrected light . . . glareless and shadow-reducing . . . sufficient to illuminate the deepest cavity adequately.

CASTLE "G-V" FOR GENERAL LIGHT—The Castle "G-V" (General Vision) Light bathes the entire room in a soft glareless radiance that dispels eye-straining shadows and lighting contrasts . . . yet concentrates sufficient intensity of light at the table for all surface examination, treatment or repair work.

CASTLE NO. 1 SPOTLIGHT provides cool, color-corrected, glareless, shadow-free light to adequately illuminate the deepest cavity. Mobile, easily adjusted, and inexpensive.

FOR FULL DETAILS, see your Castle dealer, or write: Wilmot Castle Co., 1169 University Ave., Rochester 7, New York.

Castle LIGHTS and STERILIZERS

Osteopathic Magazine

Order Blank

WITHOUT IMPRINT

Delivered to Your Office	Annual Contract	Single Order
Under 200 copies	8½c each	9c each
200 or more	7½c each	8c each
Mailed Direct to List		
Under 200 copies	10¼c each	10¾c each
200 or more	9¼c each	9¾c each

IMPRINTED

Add $1.00 per 100 (**Minimum Charge**) to following prices to cover cost of imprinting:

Delivered to Your Office	Annual Contract	Single Order
*50 to 200 copies	8½c each	9c each
200 or more	7½c each	8c each
Mailed Direct to List		
*50 to 200 copies	11¼c each	11¾c each
200 or more	10¼c each	10¾c each

(Postage regulations call for 1c additional postage on imprinted O.M.'s. This is included in above prices.)

*We do not accept imprinted orders for less than 50 Magazines.

IMPRINT PLATE CHARGES

Original plate set-up on contract orders—free.
Original plate set-up on single orders—$1.00.
(No charge if plate is on file.)
Changes in set-up, $1.00 each time, whether contract or single orders.

American Osteopathic Association
139 N. Clark St., Chicago 2, Ill. Date.....

Please send.....copies of OSTEOPATHIC MAGAZINE

..... issue.

Check service wanted—

☐ Contract (Start with above issue) ☐ Single order
☐ With professional card ☐ Deliver in bulk
☐ Without professional card ☐ Mail to list

2% for cash on orders of 500 or more. Mailing envelopes free. Shipping charges prepaid in United States and Canada.

Name..... City.....

Address..... State.....

Attach Copy for professional card to this order blank

KRUSE BAGS

Physician's Bag

NO. 37B

Genuine Cowhide (Seal Grain)

The exterior of this bag is made of GENUINE COWHIDE leather (SEAL GRAIN) with chrome plated expansion lock, leather covered steel frame, welted seams and double handles. The interior of the bag has a fine selected lining, an adjustable strap for bottles, a utility side pocket and a compartment to hold the blood pressure apparatus.

THE GENUINE COWHIDE BAG (SEAL GRAIN) is made in the following sizes:

16" Long	7" Wide	10½" High
17" "	7¼" "	11" "
18" "	7¼" "	11" "

See Your Nearest Dealer for Other Types of Medical Bags Manufactured by

G. KRUSE & COMPANY

800 McCARTER HWY. NEWARK 5, N.J.

The Spinalator
REGISTERED U.S. PATENT OFFICE

The Spinalator is more than a treatment table, more than a mechanical aid, more than an ordinary modality. It is the attainment of a long sought objective, the result of many minds working to a common end, viz.: an instrument of beauty and durability that will perform 80% of the work in a general manipulative treatment and do it better than if it had been done by hand.

Write today for full details.

THE SPINALATOR COMPANY

P. O. Box 826 Asheville, N.C.

LITERATURE WALL RACK

For office, clinic or hospital.

Made of strong, welded steel, enameled black, with green fibre backing, and black chain hanger. Size 20 in. x 16½ in. Weight 2 lbs. 6 oz. (with crate 7 lbs.)

Keeps literature clean and orderly.

F.o.b. Chicago—$5.00

AMERICAN OSTEOPATHIC ASSOCIATION

139 N. Clark St. Chicago 2, Ill.

OPPORTUNITY: CLEVELAND OSTEOPATHIC HOSPITAL—BAY VIEW HOSPITAL, on THE SHORES OF LAKE ERIE, IN CLEVELAND, OHIO.

Three internships available May 1, 1948. Three internships available July 1, 1948.

These recognized internships lead to certified residencies in the following specialties: Major Surgery, O.B. and Gyn. Radiology, General Medicine, ENT, Proctology, Roentgenology.

Certified specialists are here to train you in Major Surgery, Anesthesia, Pediatrics, OB and Gyn. Proctology, Radiology, ENT and General Medicine.

Special instruction available in Pathology, Urology, Orthopedics, Osteopathic Manipulation, Continuous Caudal Analgesia and Planned Parturition.

Write S. A. Sheppard, D.O., 3146 Euclid Ave., Cleveland for further information.

. . . to relieve the strain of

CHRONIC IRREGULARITY

WHEN aberrations of the menses suggest that normal function has overstepped the bounds of physiologic limits—the physician is often confronted with a condition which proves highly distressing to the patient.

For such cases (as in amenorrhea, dysmenorrhea, menorrhagia and metrorrhagia), many physicians rely on Ergoapiol (Smith) with Savin as the product of choice. By its unique inclusion of all the alkaloids of ergot (prepared by hydroalcoholic extraction), and the presence of apiol and oil of savin—Ergoapiol (Smith) with Savin provides a balanced and sustained tonic action on the uterus, affording welcome relief in many functional catamenial disturbances. It produces a desirable hyperemia of the pelvic organs, stimulates smooth, rhythmic uterine contractions, and also serves as an efficient hemostatic and oxytocic agent. General dosage: 1 to 2 capsules 3 to 4 times daily.

Write for your copy of the new 20-page brochure: "Menstrual Disorders—Their Significance and Symptomatic Treatment"

Supplied only in ethical packages of 20 capsules.

ERGOAPIOL (Smith) *with* SAVIN

MARTIN H. SMITH COMPANY • 150 LAFAYETTE ST., NEW YORK 13

Ethical protective mark, "MHS" visible when capsule is cut in half or more.

For Your DETOXICATION *Program*

Try this technique on a few of your stubborn cases and see how delighted you'll be with the results.

NO COLONICS NEEDED

First: Implant a real live acidophilus with a simple enema . . . . . using the type of culture that can actually BECOME ADAPTED to the human colon ('Y' strain lactobacilli) . . . and help establish an antiputrefactive intestinal flora. Culture comes in 6 oz bottles. Use half by direct implantation as a retention enema and the other half orally.....Retail $2.00

Second: Feed the implanted organisms with a good brand of whole whey. (Schiff Lactose-Minerals-Whey obtained from buttermilk plasma) . . . and watch resulting improvements in intestinal conditions due to putrefactive intestinal floras and constipation. Tall Can.....Retail $1.30

Also Offered: Neutra-Bland

Whey-plus "Bulk" for special indications where greater laxation plus whey advantages are needed. Neutra-Bland is an effective bulk laxative and antiputrefactive. Useful in atonic spastic and colitis conditions .....Retail $3.00

Subject to regular professional discounts

Schiff Bio-Food Products Dept. A.O.

Linwood Station **Detroit 6, Michigan**

TECA

OUTSTANDING IN EFFICIENCY

• APPEARANCE • DURABILITY

LOW-VOLT and HYDROGALVANIC GENERATORS

Specializing in the Manufacture of Electrotherapeutic Apparatus

For Information, Write: **TECA CORPORATION, 220 W. 42 St., New York 18, N.Y.**

This apparatus looks 33 years into the future!

ABSOLUTELY no crystal balls or mirrors! We took ten Tycos Aneroids at random from stock and attached them to this test apparatus. So far, it has actually pulsated them 242,353 times—the equivalent of using your Tycos 20 times a day for 33 years. Result? The Tycos Aneroid is even more accurate than we thought! Six times a minute, day after day, they've been inflated from 0 to 200 mm. At the "33 year" mark, nine are still perfect and the tenth shows a maximum error of 4 mm (clearly indicated because the pointer doesn't return within zero—a visual check on Tycos accuracy!)

Of course, your Tycos can't be beat for convenience. Just zip open the pocket case, circle the cuff around the arm once, and hook it on. Accurate in any position too. And easy-to-read black numerals stand out sharply on the white dial even in dimly lighted sick rooms.

Only $36.50 complete with zipper case and our 10-year triple guarantee. Available along with the 1948 Tycos Mercurial at your surgical supply dealer's today. Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada.

Taylor Instruments
MEAN ACCURACY FIRST

The Tycos Aneroid . . . The Binoc Clinical

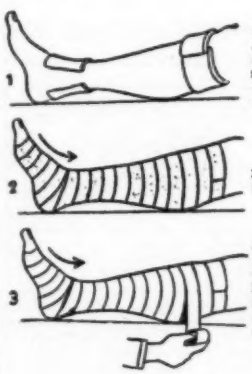
CONTURA *and*
Reg. U. S. Pat. Off.

PRESSOPLAST
Reg. U. S. Pat. Off.

The Combination Pressure Bandage
(Pat. Applied For)

In the Treatment of LEG ULCERS AND ECZEMAS

1. Apply moist Contura bandage loosely. Contura makes shaving unnecessary.
2. Apply 3" wide Elastic Adhesive Pressoplast bandage over Contura bandage with firm but non-constricting pressure, starting at the base of the toes and wrapping the bandage up to the knee. (See illustration.)
3. Always bandage the leg from toes to knee.



1. Protect instep, Achilles tendon and region directly below knee with gauze spread with vaseline.
2. Apply Contura bandage loosely.
3. Apply Pressoplast bandage over Contura bandage with firm but non-constricting pressure.

4. The treatment is ambulatory. Walking increases the action of the bandage.
5. Change the bandage when it becomes loose. The first few bandages may require frequent changing, especially if there is a pronounced swelling at the start of the treatment.
6. To remove bandage, simply cut the entire length. The Contura bandage will have prevented the adhesive film on the Pressoplast bandage from adhering to the leg.
7. In the after treatment of leg infections, it is recommended that the leg be adequately supported with a 3" wide "PRESSO" BANDAGE (Cotton Elastic with Rayon—non-adhesive).

Write for detailed literature

MEDICAL FABRICS, Inc.
10 Mill Street **Paterson 1, N. J.**

CLASSIFIED ADS

RATES PER INSERTION. $2.00 for 20 words or less. Additional words 10 cents each. 25c for box number.

TERMS: Cash with order.

COPY: Must be received by 1st of preceding month.

ADDRESS all box numbers c/o THE JOURNAL, 139 N. Clark St., Chicago 2, Illinois.

FOR SALE: X-ray filing Cabinet, Steel, 14x17 Films, 3-Drawer, full suspension slides, $70.00. Non-suspension cabinet $60.00. Steel efficiency file 6-drawer for 4x6 cards, 1 letter size, bottom drawer safe compartment with lock. Anything in physio-therapy X-ray accessories, colonic-tube and pad replacements. Edmund F. Hanley, 1021 No. Grand, St. Louis 6, Mo.

WANTED: Radiologist, certified preferred, but not imperative. Exceptional opportunity in Middle West for one interested in building for the future. Write full particulars with complete qualifications. Box 377, THE JOURNAL.

PHYSICIAN having hospital and general practice experience wishes to associate with clinic or hospital. Would like to learn specialty. Write Box 388, THE JOURNAL.

FOR SALE: One Castle "Compact" Sterilizer Combination Unit including full size 16" x 24" Hospital Sterilizer for dressings, utensils, rubber gloves and solutions. Gas Heat operation. One Model S-325 Short Wave Garfield Diathermy machine. THE WESTERN NATIONAL BANK OF YORK, PA., ADMINISTRATOR of M. CARL FREY ESTATE.

INTERNSHIPS and RESIDENCIES available at approved hospital. State Aid Program guarantees plenty of clinical material. Interns Committee. Bangor Osteopathic Hospital, Bangor, Maine.

COLLECT ACCOUNTS FASTER! Use friendly reminder slips on monthly statements. Free samples. N. Cott, 265 Marmona Court, Palo Alto, California.

WANTED: For the month of August, physician capable of conducting busy general practice. Prefer one recently completing residency or seeking location. Lucrative arrangement, located in large Missouri city. If interested send snapshot, references, etc. Box 583, THE JOURNAL.

FOR SALE: Two, thirty year practices and equipment. Gentleman doing Eye, Ear, Nose and Throat and some general; lady doing general and gynecology. Sinusoidal, diathermy, ultra violet, infra red, Shellberg colonic, tables, files and more. Retiring. Ohio law unlimited. Write Box 584, THE JOURNAL.

FOR SALE: X-ray-Profex mobile unit, like new, with accessories (foot switch, hand timer two cones) $350.00. Retails new $750. Write Box 586, THE JOURNAL.

WANTED: Intern for small hospital doing general medicine, surgery, urology, obstetrics. Located in southern Florida. $150.00 monthly plus room and board. Box 585. THE JOURNAL.

IF YOU have a TEXAS LICENSE and are tired of long cold winters and really want to give osteopathic treatments, write to Dr. Sam L. Scothorn, 312 Andrews Building, Dallas, Texas.

OPPORTUNITY for surgeon. 50-bed general hospital in thriving industrial community. 250,000 drawing population. Iowa surgical license required. Write Box 582, THE JOURNAL.

ANNOUNCEMENT: The Eighth Annual Midsummer Graduate Course in Diagnostic and Operative Urology will be presented August 9th to 28th inclusive. Address all inquiries to Dr. Philip A. Witt, 1550 Lincoln St., Denver 5, Colorado.

FOR SALE: Seven-bed clinic with separate 5-bed building for negoes. One story brick, newly decorated, ten rooms, two baths. Located in Southeastern Missouri town of 3,000. Three towns within three mile radius without doctors. Hospital near. 1947 total gross revenue $50,000. Selling because of health. Write Box 587, THE JOURNAL.

NEW.... Ritter...

DeLUXE HYDROMATIC Sterilizers!

● You simply set the amazing new SYNCHRONOUS Timer either before or after placing instruments in the sterilizer. The Timer operates *only* when water reaches boiling point. You know positively that instruments have been fully sterilized for the required time.

Model "E-3" 16" New Timer Assures Complete Sterilization

IMAGINE THESE *EXCLUSIVE* ADVANTAGES IN YOUR DAILY PRACTICE:

EXCLUSIVE . . . Automatic Water Supply

EXCLUSIVE . . . Automatic Float-type Safety Switch

EXCLUSIVE . . . Automatic Water Level

EXCLUSIVE . . . Automatic Pre-conditioning of Water

FOR ADVANCED EQUIPMENT LOOK TO Ritter COMPANY INCORPORATED RITTER PARK, ROCHESTER 3, N.Y.

● *Write for NEW CATALOG. It tells all about the new line of 14" and 16" Sterilizers—the DeLuxe Hydromatic, Hydromatic and Regular. 6 types with many new features.*

SAVE TIME • SAVE ENERGY

PROVIDE MORE EFFICIENT OPERATION

CALIFORNIA

Dr. Cecil D. Underwood
Practice limited to
DERMATOLOGY
and
SYPHILOLOGY
416 West 8th Street
Los Angeles, California

LEE R. BORG
D.O. F.A.O.C.Pr.
Certified by the A.O.B.P.
Proctology
1130 West Santa Barbara Avenue
Los Angeles, California
AXminster 7149

MERRILL SANITARIUM
(Neuropsychiatric)
Established in 1923
4600 Centinela Boulevard
Venice, California
a suburb of
LOS ANGELES

Drs. Edward B. Jones
Forest J. Grunigen
and
Robert F. McBratney
609 So. Grand Ave.
Los Angeles, Calif.
Practice limited to
Urology

Complete Psychiatric Service
THOMAS J. MEYERS
M.A., D.O., F.A.C.N.
FULL facilities for the OSTEOPATHIC care of the insanities, addictions, neuroses, deficiencies, epilepsies, migraines and all other psychiatric problems.
234 E. Colorado St., Pasadena, Calif.

Books Received

THE 1947 YEAR BOOK OF PHYSICAL MEDICINE. Edited by Richard Kovacs, M.D., Professor of Physical Medicine, New York Polyclinic Medical School and Hospital; Attending Physical Therapist, Manhattan State, Harlem Valley State, Columbus and West Side Hospitals; Visiting Physical Therapist, New York City Department of Correction Hospitals; Consulting Physical Therapist, New York Infirmary for Women and Children, Mary Immaculate Hospital, Jamaica, N. Y., St. Charles Hospital, Port Jefferson, L. I., Hackensack Hospital, Hackensack, N. J., and Alexian Brothers Hospital, Elizabeth, N. J.; Senior Consultant in Physical Medicine and Medical Rehabilitation, Veterans' Administration. Cloth. Pp. 432, with illustrations. Price $3.75. Year Book Publishers, Inc., 304 S. Dearborn St., Chicago, 1948.

ENCYCLOPEDIA OF MEDICAL SOURCES. By Emerson Crosby Kelly, M.D., F.A.C.S., Associate Professor of Surgery, Albany Medical College, Attending Surgeon, Albany Hospital, Editor, Medical Classics. Cloth. Pp. 476. Price $7.50. The Williams & Wilkins Company, Mt. Royal and Guilford Ave., Baltimore, 1948.

HANDBOOK OF TREATMENT AND MEDICAL FORMULARY. By Charles M. Gruber, Ph.D., M.D., Professor of Pharmacology, Jefferson Medical College, Philadelphia. Cloth. Pp. 585. Price $7.00. F. A. Davis Company, 1914 Cherry St., Philadelphia, 1948.

LABORATORY EXPERIMENTS IN PHYSIOLOGY. By W. D. Zoethout, Ph.D., Professor Emeritus of Physiology in the Chicago College of Dental Surgery (Loyola University). Ed. 4. Cloth. Pp. 263, with illustrations. Price $3.00. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis, 1948.

HEADACHE AND OTHER HEAD PAIN. By Harold G. Wolff, M.D., Professor of Medicine (Neurology) and Associate Professor of Psychiatry, Cornell University Medical College; Attending Physician, New York Hospital, New York. Cloth. Pp. 642, with illustrations. Price 12.00. Oxford University Press, 114 Fifth Ave., New York, 1948.

THE ASEPTIC TREATMENT OF WOUNDS. By Carl W. Walter, A.B., M.D., Assistant Professor of Surgery, Harvard University; Senior Associate in Surgery at the Peter Bent Brigham Hospital. Cloth. Pp. 372, with illustrations. Price $9.00. The Macmillan Company, 60 Fifth Ave., New York, 1948.

PHYSIOLOGY OF EXERCISE. By Laurence E. Morehouse, Ph.D., Associate Professor of Physical Education, The University of Southern California; Formerly Research Fellow, Harvard Fatigue Laboratory; and Augustus T. Miller, Jr., Ph.D., Associate Professor of Physiology, University of North Carolina Medical School. Cloth. Pp. 353, with illustrations. Price $4.75. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis, 1948.

PSYCHOBIOLOGY AND PSYCHIATRY. A Textbook of Normal and Abnormal Human Behavior. By Wendell Muncie, M.D., Practicing Psychiatrist; Chairman, Medical Advisory Board, Seton Institute, Baltimore, Md.; Associate Professor of Psychiatry, Johns Hopkins University; Consultant in Psychiatry, U. S. V. A. Ed. 2. Cloth Pp. 620, with illustrations. Price $9.00. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis, 1948.

TEXTBOOK OF GYNECOLOGY. By Emil Novak, M.D., F.A.C.S., Assistant Professor of Gynecology, The Johns Hopkins Medical School; Gynecologist, Bon Secours and St. Agnes Hospitals, Baltimore. Ed. 3. Cloth. Pp. 742, with illustrations. Price $8.00. The Williams & Wilkins Company, Mt. Royal and Guilford Ave., Baltimore, 1948.

CALIFORNIA

Munish Feinberg, D.O.
CARDIOLOGY
Los Angeles,
California

COLORADO

Dr. Philip A .Witt
Division of Urology and Surgery
of the Rocky Mountain Clinic
1550 Lincoln Denver

DISTRICT OF COLUMBIA

Dr. Chester D. Swope
Osteopathic Physician
The Farragut Apts.
Washington, D .C.

FLORIDA

Clement King Heberle, D.O.
ARTHRITIS
Osceola Sanatorium & Hotel
Daytona Beach, Florida

MASSACHUSETTS

VEITCH
EAR, NOSE, THROAT
BOSTON

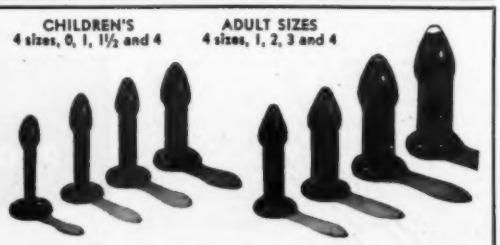
YOUNG'S RECTAL DILATORS

In CONSTIPATION

Used by the profession for more than 40 years, Young's Rectal Dilators provide anal dilation and help to restore normal tone where tight or spastic rectal sphincter muscles have induced a constipated condition. Sold only on Rx. Set of 4 in graduated sizes, children's $5.50, adults' $5.75. Available at Ethical Drug Stores or from Your Surgical House. Write today for complete literature.

F. E. YOUNG & CO. 420 E. 75th St., Chicago 19, Illinois

CHILDREN'S 4 sizes, 0, 1, 1½ and 4
ADULT SIZES 4 sizes, 1, 2, 3 and 4



MISSOURI

COLLIN BROOKE, D.O.
PROCTOLOGIST
F.A.O.C. PR.
210 Frisco Building
906 Olive St.
St. Louis 1

NEW JERSEY

BUTTON CLINIC
Complete Diagnostic Service
John C. Button, Jr., D.O.
15 Washington St., Newark 2, N. J.

NEW MEXICO

J. Paul Reynolds, D.O.
Roswell Osteopathic Clinic and Hospital
401 N. Lea
Roswell, N. Mex.

Widney Clinic
Geo. C. Widney, D.O.
Geo. C. Widney, Jr., D.O.
Roderick K. Widney, D.O.
Travis W. Ferguson, D.O.
A. C. Bigsby, D.O.
Albuquerque Monkbridge Manor (3803 No. 4th)

NEW YORK

Dr. Thomas R. Thorburn
HOTEL BUCKINGHAM
101 W. 57th Street
New York City

OHIO

Bernard Abel, D.O.
Maxwell N. Greenhouse, D.O.
General Surgery
Pathological Obstetrics
336 West Woodruff Avenue
Toledo 2, Ohio

TREATMENT BY DIET. By Clifford J. Barborka, B.S., M.S., M.D., D.Sc., F.A.C.P., Assistant Professor of Medicine, Northwestern University Medical School, Chicago; Attending Physician, Passavant Memorial Hospital; Consultant in Gastro-Enterology and Gastroscopy, Diagnostic Center, Hines Veterans Hospital; Formerly Consulting Physician, The Mayo Clinic. Ed. 5. Cloth. Pp. 784, with illustrations. Price $10.00. J. B. Lippincott Company, 227 S. Sixth St., Philadelphia, 1948.

CUTTER LABORATORIES
Issues Warning to Hospitals

As we go to press we learn that the Cutter laboratories has recalled its entire line of solutions for mass injection through the veins.

Early in the year Cutter Laboratories in Berkeley, California made a shipment of 391 cases of 5% glucose in normal salt solution, bearing the laboratory code number CM-8164. It was not until three months later that a doctor advised he was noticing distressing reactions in patients who had been given injections from bottles bearing this code number.

Inasmuch as contamination has been found in another and entirely different glucose solution, dextrose 10% in ringers, Dr. R. K. Cutter announces that recall is the only possible action in order to protect the safety of the public.

"The company in cooperation with The Food and Drug Administration, is requesting the assistance of health departments throughout the country, in immediately recalling from hospitals Cutter's entire line of dextrose and other solutions for mass intravenous injection. Company officials believe that discovery of this new contamination makes questionable the use of any product produced in their intravenous solutions department until this entire contamination difficulty is solved. The other products produced in this department are concentrated dextrose, distilled water, sodium citrate, normal saline solutions in 50 and 100 cc. bottles, as well as all flasks supplied by Cutter for community blood and plasma banks."

PENNSYLVANIA

DR. DAVID SHUMAN
Hypermobile Joints
1818 Pine St.
Philadelphia, Pa.

RHODE ISLAND

Dr. F. C. True
SURGEON
1141 Narragansett Blvd.
CRANSTON 5, R. I.
CHIEF SURGEON
R. I. OSTEOPATHIC HOSPITAL

Terrell E. Cobb, D.O.
PROCTOLOGY
171 Westminster St.,
Providence 3, R. I.

FOREIGN

Dr. William J. Douglas
43 Avenue George V.
Tel. Balzac 13-98
Paris France

Dr. Ted Worden
Osteopathic Physician and Surgeon
800 Robert Dollar Bldg.
Tel. Office 10900
51 Canton Road Tel. Home 13374
Shanghai, China

WHITE
Teckla
GOWNS
FOR OFFICE
PATIENTS

WE HAVE KRINKLE CLOTH

No. 4G—Krinkle Cloth, for home laundering—no ironing necessary.
12 for $25.00 6 for $13.00

No. 3G Plain Cloth—for public laundries.
12 for $20.00 6 for $10.50

Backs open 12", 24" or full length.
Actual bust measure of garments [Size 1 is 42" Size 2 is 52" Size 3 is 60"] All 40" long
Extra ties $1.00 for 50 yards.
Postage paid on CASH orders.

TECKLA GARMENT CO.
Box 863 Worcester 1, Mass.

WIDGET

The neatest widget we've seen is the new electrical scissors. Smooth beyond description, perfectly harmless and truly efficient.

This is exactly true of ZymenoL. For effective bowel management, ZymenoL provides smooth, gentle laxation without harmful or habit-forming drugs and with teaspoon dosage. Which *is* an advantage.

ZymenoL
AN EMULSION WITH BREWERS YEAST

* a product of Otis E. Glidden & Co., Inc.

FOR BETTER PRACTICE USE BETTER EQUIPMENT

Model SRF

30MA-60MA or 100MA Units

MATTERN X-RAY

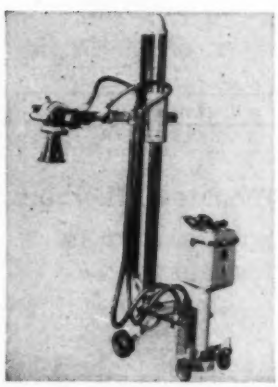
The Mattern SRF Unit furnished with a horizontal bucky table is an all-purpose unit that provides the efficiency and assured results of large equipment at a decided saving.

The Mattern SR Mobile Unit is a compact unit with extreme flexibility that makes it desirable in the office or hospital. Guaranteed power and fine controls insure excellent diagnostic results.

The Mattern line of X-Ray Equipment is complete from a portable unit to 200MA and Therapy Units. There is a Mattern-X-Ray Unit to fit your every requirement.

Get the facts now on this line of outstanding X-Ray Equpmeint.

Model SR



Mobile 30MA or 60MA Units

F. MATTERN MFG. CO.

4637-4659 North Cicero Avenue Chicago 30, Illinois

Advertisers Index

Alkalol Co. 40, 45
American Electric Co. 23
American Felsol Co. 43
American Osteopathic Association 47, 50, 54, 55, 62
American Sterilizer Co. 8
Ames Co. 34
Arlington Chemical Co. ..... Cover III
Ayerst, McKenna & Harrison, Ltd. 18

Bard Parker Co. 36
Barnes, A. C., Company, Inc. 31
Baum, W. A., Co. Inc. 46
Borcherdt Malt Extract Co. 41
Borden Co. 6
Bristol-Myers Co. 11

Ca-Ma-Sil Co. 50
Camel Cigarettes 27
Camp, S. H., and Company 22
Can Mfgs. Institute 7
Wilmot Castle Co. 53
Cereal Institute 19
Cereal Lactic Co. 29
Chicago Dietetic Supply House, Inc. 43
Ciba Pharmaceutical Products, Inc. ..... Cover II-13
Classified Ads 57
Clay Adams Co., Inc. 33
Cobbe Pharmaceutical Co. 44
Commercial Solvents Corp. 38
Cutter Laboratories 37

Dartell Laboratories 44
Davis & Geck 52
Denver Chemical Co. 49
DePuy Mfg. Co. 51
Dome Chemical, Inc. 45

Endo Products Inc. 3
Esscolloid Co. 61

Foundation Products, Inc. 24

General Electric X-Ray Corp. 4-5
Otis E. Glidden & Co. 60

Huxley Pharmaceuticals, Inc. 39

Johnson & Johnson 1

Kelley-Koett Mfg. Co. 14
Knox Gelatine Co. 9
Kruse, G., & Co. 54

Lanteen Medical Laboratories, Inc. 25
Lavoris Chemical Co. 48
Lea & Febiger 53

Majestical Surgical Co. 49
Mattern F., Mfg. Co. 60
McIntosh Electrical Corp. 51
Medical Fabrics, Inc. 56
Mellin's Food Company 52
Menley & James, Ltd. 41

Novocol Chemical Co. 32

Ortho Pharmaceutical Corp. ..... Cover IV
Ottawa Sanatorium 28

Pelton & Crane Co. 42
Professional Cards 58, 59
Professional Equipment Co. 10
Professional Foods 48
Professional Sales Co. 35

Reynolds, R. J., Tobacco Co. 27
Ritter Co., Inc. 57
Roerig, J. B. & Co. 16, 17
Rystan Co. 12

Seamless Rubber Co. 30
Saunders, W. B. Company ..... Cover I
Schiff Bio Food Co. 55
Shield Laboratories 21
Smith, Martin H., Co. 55
Spinalator Co. 54
Standard Pharmaceutical Co., Inc. 42

Tampax, Inc. 15
Taylor Instrument Companies 56
Teca Corporation 55
Teckla Garment Co. 59

Vitaminerals, Inc. 26
Vodine Co. 40

Wander Company 20
Westwood Pharmacal Corp. 39

Young, F. E. & Co., Inc. 58

Zymenol (Otis E. Glidden & Co.) 60

ADEQUATE DIET
The Vital Factor in Special Therapy

Preconditions your patient to respond to treatment.

Essential Vitamins and Minerals Adapted for Easy Assimilation Dispersed in a Colloidal Jelly.

Smooth lubricant jelly bulk to correct stubborn constipation.

Full potency.

Vitamin content when packed 150% average daily needs.

Also contains:

Natural Vit. B complex (200 mgm/oz) with biotin, choline, folic acid, pantothenic and para-amino-benzoic acids, pyridoxine and other vitamins.

Trace elements—cobalt, copper, magnesium, manganese and zinc.

Mail Coupon for Introductory Offer

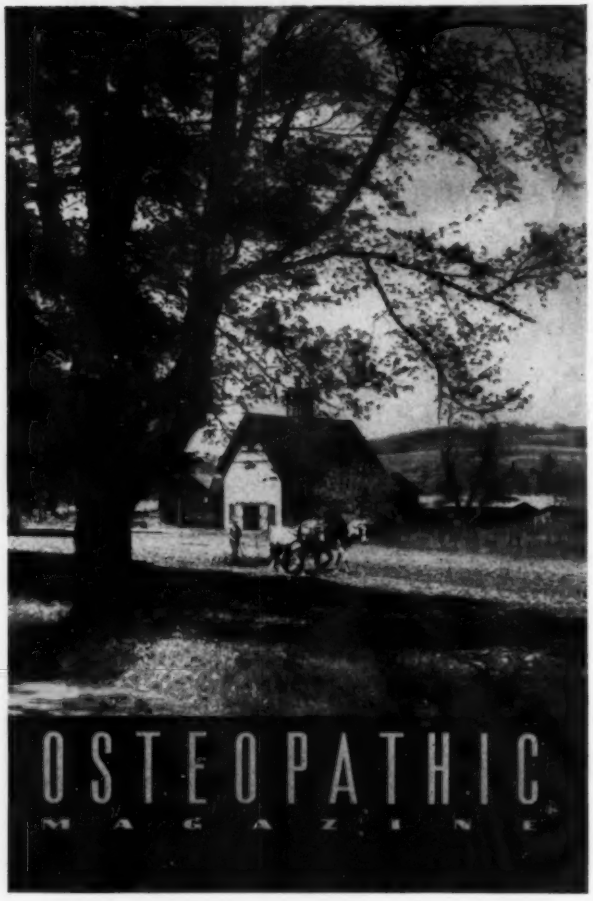
THE ESSCOLLOID CO., INC.
1620 Harmon Place
Minneapolis 3, Minn.

NAME.....

ADDRESS.....

CITY..... STATE.....

Summer Is the Time for Play



June ushers in summer, the time for vacation and for play. The warm sun and the green hills tempt many to forget the rules of good health and to play too hard. The June issue of OSTEOPATHIC MAGAZINE is designed to remind the reader that he needs to watch his health in summer as during the rest of the year.

Featured in the June issue of OSTEOPATHIC MAGAZINE is the article, *Irritable Colon*. This condition is especially insidious because, while the patient is not ill enough to stay in bed, he is upset enough to be nervous, worried, and generally miserable. What irritable colon really is and how it can be eased by osteopathic care is explained in this article. Normalization of the nervous system is an important part of treatment. Any patient suffering from this condition (and there are many) will welcome the opportunity to read this article.

Other articles of interest in the June issue of OSTEOPATHIC MAGAZINE are: *Are Your Children Safe in Summer?*, *Hidden Factors in Sinus Trouble*, and *Doctor of the Arts*.

• ***Get your orders in early. Recent issues have been sold out and many late orders could not be filled.***

• ***If pressed for time, let Central office do your addressing and mailing at a small additional cost.***

A complete list of prices and a convenient order blank appear on page 54.

AMERICAN OSTEOPATHIC ASSOCIATION

139 N. Clark St., Chicago 2, Ill.

relief of constipation without catharsis

"The treatment of chronic constipation in reality resolves itself into a consideration of the restoration of colonic function."[1]

NEO-CULTOL* acts gently . . . to restore normal intestinal flora, counteract intestinal putrefaction, and promote normal colonic function. It is the natural approach to relief of a distressing condition and avoids recourse to the widely deplored "cathartic habit". NEO-CULTOL causes no flatulence, griping, or diarrheic movements. It provides lubrication without leakage.
Supplied: In jars containing 6 oz.

1. Soper, H. W.: Am. J. Digest. Dis. 11:255 (1944).

*The word NEO-CULTOL is a registered trademark of The Arlington Chemical Company.

THE ARLINGTON CHEMICAL COMPANY • YONKERS 1, N. Y.

Ortho-Creme

...when a contraceptive cream is preferred

High esthetic acceptability and clinical effectiveness are the distinctive characteristics of Ortho-Creme Vaginal Cream, which have made it a prescription favorite when a contraceptive agent less lubricant than jelly is desired. The pleasing soft whiteness of Ortho-Creme . . . its quick spermicidal activity . . . ready miscibility with normal vaginal secretions . . . and harmlessness to tissues, even after prolonged application, commend its consideration whenever conception is to be controlled.

Available in tubes of 2½ oz., with and without applicator, and the new large 4⅛ oz. tube. Active ingredients: ricinoleic acid 0.75%, boric acid 2%, sodium lauryl sulphate 0.28%.

Ortho Pharmaceutical Corporation
RARITAN, NEW JERSEY

COPYRIGHT 1948, ORTHO PHARMACEUTICAL CORP.